APR 1 1924 Medical Lib

THE AMERICAN JOURNAL OF

CLINICAL MEDICINE

Vol. 31, No. 4 APRIL, 1924

In the Evening He Returns

THE distant sea looks blue, the far lands fair;
Love, Fame and Fortune must await him there!
White fingers beckon, siren voices call
"But come to me and I shall give you all!"—
And that's enough
To Make Youth Roam.

THE traversed sea looks grey, far lands prove bare;
Love, Peace, Contentment, none of them dwell there.
Now, long-forgotten voices speak to him, in dreams—
The land he left behind a Heaven seems,—
And that's enough
To Bring Men Home.

G. H. C.

April, 1924.

Iron and Arsenic in palatable form

ARSENOFERRATOSE

Anemia, Chlorosis, Nervous Disorders

Literature on request

Merck & Co. New York

BROMURAL

Nerve Sedative and Mild Hypnotic

for the treatment of

NERVOUS DISORDERS
AND
INSOMNIA

Supplied in powder and 5 grain tablets, Tubes of 10 and Bottles of 100 Tablets

Dose: 1 to 3 Tablets. Literature and samples from E. BILHUBER, Inc. 25 West Broadway, New York

After a Surgical Operation

Malunion, delayed healing, low-grade infections, and other interruptions to recovery can often be forestalled by building up the tissues with

Compound Syrup of Hypophosphites "FELLOWS"

a continued course of which, after a surgical operation, will often accelerate the patient's recovery.

Samples and literature on request

FELLOWS MEDICAL MANUFACTURING CO., Inc.
26 Christopher Street, New York City, U. S. A.

The American Journal of
CLINICAL
MEDICINE
Dependable Therapeutic Fact for Daily Use

Vol. 31, No. 4 April, 1924

Mrs. Clara A. Abbott

A Personal Tribute

ON July 4, 1921, Dr. Wallace C. Abbott, founder and president of The Abbott Laboratories, passed away. The story of his life work appeared in THE AMERICAN JOURNAL OF CLINICAL MEDICINE, for August, 1921. It is now our sad duty to announce the death of his widow, Mrs. Clara A. Abbott, who died on January 2 of this year, after a brief illness.

The story of Doctor Abbott's life would not be complete without something concerning the contribution of Mrs. Abbott to his success, for she was a real helpmate to him, from the very beginning of his professional career. Although she was quiet, restrained and kept herself always in the background, yet she was intensely interested in his activities and particularly in the development of the great business which he created. The story has often been told of how the Doctor began the manufacture of the first alkaloidal granules, and how Mrs. Abbott helped put them up in their home. From that day of small beginnings, she was a constant helper in everything which concerned him or contributed to the success of the great institution which he founded.

Many people knew Doctor Abbott, but only comparatively few knew Mrs. Abbott. As one of those who did, the writer feels it a privilege to testify to her earnestness, thoughtfulness, her quiet restraint, her forceful personality, and her intensely religious feeling. She was a woman of fine education, fine spirit—in every respect truly cultured.

Mrs. Abbott was born in Pomfret, Vermont, December 14, 1857. Her parents were the Rev. Chester D. and Philena Ingraham. In 1879 or thereabouts, she graduated from the State Normal School at Randolph, Vermont, and, for some years following, taught school in

her own state and in Massachusetts. In 1886, at Royalton, she was married to Dr. Wallace C. Abbott, and almost immediately thereafter came with the Doctor to Chicago.

Upon her arrival in Chicago, Mrs. Abbott affiliated herself with the Ravenswood Methodist Church, which affiliation she maintained up to the time of her death. She was a member of the Women's Home and the Foreign Missionary Societies; a charter member of the Epworth League; a member of the Central Branch of the W. C. T. U.; a member of the Board of Directors of the Bethesda Day Nursery, and a charter member of the Ravenswood Woman's Club. Throughout her life she was an earnest and consistent worker in church and welfare organizations. She will long be remembered in this community for her beneficent thought and effort in behalf of others less fortunate than herself.

Mrs. Abbott is survived by a daughter, Eleanor, residing at home, and by two sisters, Miss Ada R. Ingraham and Mrs. J. W. Ranson, of Chicago.

BLOOD PRESSURE AND HEART ACTION IN SLEEP AND DREAMS

The relation to hemorrhages, angina and sudden death, of blood pressure and heart action in sleep and dreams, is the subject of a communication under the general title of "Some Applications of Physiology to Medicine", which is reported in *The British Medical Journal* for December 22, 1923, by Dr. J. A. MacWilliam, Professor of Physiology, in the University of Aberdeen.

The author refers to the slowing of the pulse rate (noted by Galen) and of the respiration during sleep, and which has long been known to be accompanied by a lowering of bodily temperature, a great reduction in metabolic activity and heat production, depression of reflexes, diminished secretion, etc. It has been asserted that the diminished vascularity of the brain substance during sleep was due to an increased volume of blood in the limbs; others claimed that the greater amount of blood was found in the abdomen.

The diminished heart action, respiration, blood pressure, temperature, and general metabolism, during sleep, which reach their low-water mark in the early hours of the morning, explain that death from illnesses involving progressive exhaustion and a gradual running down of the machinery of life should often take place in that period. Likewise, many phenomena of disease, aggravation of morbid conditions and symptoms, in the night, can be brought into relation with the general lowering of vital activities during sleep—for example, some respiratory troubles which may, in some cases, be associated with the depression of respiration naturally occurring in that period, the reduced sensitiveness of the respiratory center to the normal excitation by CO_2 with the consequent modification in the state of the blood, heightening of the grade of acidosis which may be present, development of Cheyne-Stokes respiration, etc.

In contrast with the associations of depressed functions during sleep, certain phenomena are observed for which this condition does not afford an acceptable interpretation. Doctor MacWilliam refers to hemorrhages of various kinds which necessarily stand in relation to a rise of blood pressure and increased stress on the vessel walls. Cerebral hemorrhage frequently occurs at night and in sleep; so does pulmonary hemorrhage and gastrointestinal hemorrhage. Anginal pain also, which, occurring in daytime, is commonly associated with exertion or excitement involving raised blood pressure and an increased call upon the heart, may seize the patient in the quiet of the night.

The explanation of these apparently contradictory phenomena is found in the conclusion that, in sleep, we have to deal with two distinct conditions, which have strikingly different associations as far as nervous, circulatory, respiratory, and other functions are concerned: (1) undisturbed or sound sleep, attended by lowering of blood pressure, heart and respiratory rates, etc., and (2) disturbed sleep, modified by reflex excitations, dreams, nightmares, etc., sometimes accompanied by extensive rises of blood pressure (hitherto not recognized), increased heart action, changes in respiration, and various reflex effects. The circulatory changes in disturbed sleep are

sometimes so very pronounced that it is somewhat remarkable that they should so long have escaped observation.

Doctor MacWilliam states that, so far as he knows, the occurrence of marked rises in blood pressure during sleep has not even been suggested—apart from the fact that no actual measurements have been recorded. No doubt, paucity of opportunities and difficulties in observation have stood in the way. But the considerations as regards the occurrence of hemorrhages, etc., in the night give distinct indications of the probability of important blood pressure changes being present in some instances.

We ourselves find here an explanation of and a justification for the question that we frequently put to our patients as to their physical and mental condition on wakening. Are they bright and refreshed, or do they feel fatigued, lame, depressed, as though they had worked hard during the night? Do they have exciting or disturbing dreams? Does the state of the bed clothes indicate that they have been restless in moving about much during their sleep?

The author's further investigations concerning disturbed sleep and the changes that occur in disturbed sleep, also concerning the dreaming state and some physical disturbances due to that; further, regarding emotions, motor effort and gastrointestinal disturbances, must be read in the original. We will content ourselves with reproducing his conclusions which are as follows:

It is clear that the foregoing facts must be taken as profoundly modifying the simple conception of night as the time of rest, and sleep as a condition in which quiescence prevails and recuperative changes go on, restoring the bodily and mental capacities which have become more or less reduced at the end of the hours of work and wakefulness—a period of repose also attended by sedative and beneficial effects on many morbid conditions. This conception, while true as regards undisturbed or sound sleep, has to be qualified by the consideration that night and sleep are occasionally the season of acute reflex and emotional disturbances which, in the peculiar conditions present, induce very pronounced effects on the circulatory system, throwing a formidable strain upon its weak points, whether these be cardiac, with susceptibility to fibrillation or anginal pain, etc., or arterial, with risk of rupture.

In this way, the individual may, during the nocturnal period of assumed repose, be subjected to suddenly developed stresses, as estimated by the rise of blood pressure (even as measured after awaking, when it is falling) and the evidences of increased heart action, far beyond what is involved in ordinary muscular exercise gradually initiated—for example, walking, cycling, slow ascent of stairs, straining, or mental excitement in certain degrees. Thus, hemorrhages, the onset of anginal attacks, and other disturbances in the night can be readily accounted for, also sudden death, probably due to ventricular fibrillation in most instances.

In the light of these observations, it is easy to understand how, in certain circumstances, death may come like a thief in the night to a susceptible person living with circulatory conditions that approach the danger line, though these conditions may, in favorable circumstances and barring fresh developments, be compatible with many years of moderately active life.

A weak mind is like a microscope, which magnifies trifling things, but can not receive great ones.—Chesterfield.

THE RELATION OF ACCIDENTS TO CERTAIN DISEASES

We are informed that the medical division of the New York State Department of Labor is preparing a series of Bulletins showing the relation of accident to certain diseases. We have received Bulletin No. 2 entitled "The Influence of Injury on Bone and Joint Diseases", by Royal Whitman, and Bulletin No. 3, "Injuries to the Head and Their Sequelae", by Dr. Raphael Lewy. These Bulletins are issued under the direction of Bernard L. Shientag, industrial commissioner.

The commissioner informs us that he will be glad to add to his mailing list the names of surgeons who would care to receive copies of these publications. The New York Office is located at 124 E. 28th St.

DENTAL INFECTIONS AND THE DEGENERATIVE DISEASES

For long, we have been impressed with the role that is played by dental infections in the production of infectious diseases—which may be mutual insofar as the ever-present pathogenic bacteria in the mouth can not do harm unless there exists a general or a local deficiency in the resistance or unless certain constitutional inadequacies break down the systemic defenses. There is no doubt about the

advisability, indeed necessity, in many cases of a close cooperation between general practitioner and dentist, and it is for this reason that we have been greatly interested in the remarkable work of Dr. Weston A. Price, which is announced in the review department of this issue of CLINICAL MEDICINE. We have gone even further. In order to afford Doctor Price a full opportunity to present his case to the general practitioner, we reproduce his argument among the leading articles of this issue, where it appears on p. 245. This argument is convincing, and we feel that our readers will thank us for calling their attention so insistently on the problems under consideration.

Meditation is the tongue of the soul and the language of our spirit.—Jeremy Taylor.

DEFICIENCY DISEASES

A valued correspondent wrote to us as follows, in a recent letter:

"I have arrived at a certain conclusion on the question of diseases in general, as to cause at least; namely, that most of the prevalent diseases of civilized communities, such as appendicitis, Bright's disease, arteriosclerosis, diabetes mellitus, neurasthenia and cancer are due, more or less, to a deficiency in diet. In fact, I think I may, with reason, add to the above list, epilepsy. Our present-day foods are in a large measure, so refined as to contain little of the essential organic mineral salts and, hence, are worthless to the economy. I feel that a truer knowledge of dietetics would go far to eliminate these diseases which are on the increase as compared with infectious diseases—typhus, typhoid, yellow fever, etc., etc. I believe that rational dietetics should have a larger place in our armamentarium. What are your views?"

Ordinarily, the term deficiency diseases is applied to certain maladies (beri-beri, pellagra, scurvy, rachitis) which are due, wholly or in part, to the prolonged use of foods that are deficient in certain vitamines. Except for beri-beri and scurvy, this "avitaminosis" has several associated causative factors in which the vitamine deficiency of the food is only one. In so far as rachitis is a deficiency disease, it is due to the lack of suitable minerals and of the fat-soluble vitamine A. However, it has been shown definitely that confinement in dark living quarters is also a vital factor. For pellagra, various causes have been postulated, although the deficiency factor undoubtedly is active for one.

In his article on hayfever and asthma, appearing in this issue of CLINICAL MEDICINE (p. 223), Dr. A. R. Hollender declares that hayfever and asthma also are deficiency diseases, inasmuch as studies in the blood chemistry have shown the blood calcium to be low in most instances.

It does not require a very great stretch of imagination to make us agree almost wholly with our correspondent when he declares that such affections as cancer and arteriosclerosis are due to faulty diet, more especially to diet that is deficient in essential minerals. True, in the case of cancer, an excessive protein diet has often been incriminated. Nevertheless, it is undoubted that a demineralization of the tissues, notably a deficiency in calcium and potassium salts, is productive of serious harm.

Such a demineralization of the tissues has justly been accused of depleting the defensive mechanism of the organism and to diminish its resistance against the pathogenic effects of injurious agencies, notably of bacteria. This has been established particularly in the case of tuberculous disease for which the demineralization is commonly accepted as a predisposing factor.

We can well see and readily agree that a deficiency of the essential mineral constituents of the organism must have a deleterious effect and, in so far as this is true, all those diseases that are either directly caused or at least encouraged by a deficiency in minerals may properly be designated as deficiency diseases.

It is quite true that the present-day tendency, on the part of the makers of artificial foods, to foist upon the public ultrarefined products, must be held responsible in part for the increase of the socalled constitutional diseases. A persistent deficiency in an important constituent of the tissues necessarily will vitiate the constitution and it is being realized more and more that the state of the body constitution is a very important factor in determining the response, the reaction, or the yielding to certain diseases.

LET US PLAY

Doctor Candler has broken out in a manner that, while not unexpected, is distinctly pleasing. His "Good Medicine" department talk for this month is "the bee's knees," or something to that effect—whatever may be the meaning of those weird cake-eater's expressions.

Doctor Candler was not much to be spoken to, these last weeks agone. He was busy, terribly busy; so busy that he even defaulted on his department in the March issue. However, he has more than made up for it this month, and we must forgive him. If his ad-

vice, as it is presented so eloquently and convincingly on pp. 255 to 257 is not "good medicine," we don't know what is.

We are especially pleased with the product of the doctor's inspiration that presented us with a rattling good name for the new department. "Let Us Play" is the best name that has been suggested so far. It stands least in need of explanation; in fact, it needs none at all. It is immediately convincing and enticing. Therefore, the name is

Let Us Play

Playtime (we have been realizing it for some years) is as important in its way, as productive of good, as necessary for our physical, mental and spiritual well-being as are the working hours. For that reason, playtime, its when, where and how (the why needs no consideration) is fully deserving of an honored place in a doctor's magazine, such as CLINICAL MEDICINE.

The thing is developing. In another communication, it is pointed out that the doctor's wife will be interested in this department. The doctor's wife has many burdens thrust upon her and, if we come to her for assistance in the new department, we may be imposing an additional task upon her. Yet, we venture to hope that there will be sufficient pleasure associated with it to make it less arduous than it might otherwise be.

To the fishing, hunting, camping, automobiling, golfing and other forms of play, to the sociables in which the doctor or the doctor's wife assist, may easily be added the doctor's tramps or trips for recreation's sake. We have accounts of some of the latter on tap; more, we trust, will follow.

Since Doctor Richardson's suggestion was first made, a quarter of a year has passed by. It is high time that things were started, if we are to do something this season. That is why we are beginning in this April issue, and we hope that we may get numerous contributions from our readers; suggestions for making playtime enjoyable and stories about successful jaunts, no matter in what manner, whither, how long. In all of these, do not forget to "kodak as you go" and, if good pictures result from your shooting, send them along.

MALARIA IN RUSSIA

The American Friends Service Committee, 20 S. 12th St., Philadelphia, recently sent out an appeal for aid in the work that the Friends are doing in Russia, more especially with reference to malaria extinction. Malaria has increased tremendously in the agricultural districts and the peasants, having been nourished but very poorly for years, do not possess resistance to fight disease.

At the clinics supported by the Friends, over ninety thousand patients have been treated and all the orphans in the children's homes in the area of 5,700 square miles covered by the Quakers have received treatment. In the three fall months of 1923, over eighteen hundred pounds of quinine were used and we are told that, for the coming summer, at least two thousand pounds more are necessary. Also, money is needed to buy supplies and to carry on the work of permanent cleaning-up of the malaria-breeding localities. Engineers are now at work planning the necessary drainage in the worst malarial areas and the labor is to be done by the peasants for payment through the Quakers.

Dr. Jeannette Tomkins, who writes in behalf of the American Friends Service Committee, says that the appeal for help in campaigning against disease must come with a special force to medical people, and there is no country where medical barriers have broken down before disease as they have in Russia. Hence, outside help is urgently needed, and, if this help is forthcoming, the Quakers are there fully equipped to accomplish the work that is required.

Contributions to this meritorious work in behalf of the long-suffering Russian peasant may be sent to the address given in the first paragraph of this little article.

The curiosity of knowing things has been given to man for a scourge.—Bible.

VITAL FORCES OF THE ORGANISM

In his little article on the vital forces of the organism (this issue p. 261), Doctor Murphey expresses the opinion that every organic body, vegetable and animal, possesses vital forces that are capable, under normal conditions, to preserve such organisms in a state of health during their allotted lease of life on earth. Doctor Murphey believes that the natural defenses of the organism are multitudinous and variable as to kind and function. Also he assumes that each vital force is a separate and distinct entity and protects the organism against one form of injury only. The failure of these vital forces and the consequent development of abnormalities (or exogenous injuries) as they are produced by bad hygienic

environments, excesses, deprivations, mental depressions, etc., bring about predispositions to certain diseases and these predispositions, Doctor Murphey believes, can be inherited. If a perfect equilibrium of the vital forces could be maintained through life, he declares, disease would be unknown.

Doctor Murphey has here touched upon a problem that has occupied many great thinkers and that, more recently, has formed the subject of intensive studies in immunology. The natural vital forces, or defenses, of the organism undoubtedly exist and, while we are quite familiar with their manifestations in the animal and human organisms, it is of interest to refer to the fact that protective provisions are encountered also in plants. We believe, in fact, that the bitter principles, such as quinine, hydrastine, strychnine and others, which are peculiar to certain plants, have developed there, in course of time, for the protection of these plants against parasites and also against destructive small animals. Undoubtedly, this particular thought could be developed.

To come down to conditions in the human organism, we find that the unbroken skin is not readily permeable to infectious, pathogenic bacteria and that these latter find entrance only if the skin is broken in its continuity. The mucous membranes also are protected against moderate infection by their ability to produce copious fluid secretions whereby foreign substances may be washed away. The ciliated epithelia of the upper respiratory passages prevent the passing down of corpuscular elements, even if they have succeeded in breaking through the first barrier of the coarse hairs in the nostrils. And so it goes; there are protective provisions all along the line.

When, for any reason, pathogenic germs have found lodgment in the interior of the body, the lymphocytes especially resent their presence, as foreign substances are not tolerated within the organism and means are taken for their removal. In the case of the protective provisions against the localization and action of pathogenic germs, the defenses are partly cellular, partly humoral, the former being physical, while, in the function of the latter, chemical processes are involved. We are thinking here of the development of antibodies, or immune substances, which occurs in response to stimulation. Whether these antibodies are strictly, or even largely, specific, as Doctor Murphey assumes, or whether there exists but one general antibody which can function in many different ways, is more of academic than of practical interest. We have learned about agglutinins, precipitins, opsonins, amboceptors and all the rest of them, all of which were at one time or another, declared to be specific; and we have also been informed of specific defensive ferments, according to Abderhalden, the particular functions of which are closely limited and circumscribed. On the other hand, the view has been expressed that there is one kind of antibody which can adjust itself in its defensive manifestations to the peculiarities of the injury which the organism has sustained and which is capable of resisting all sorts of harm. This latter view has received support by what we know of the good effects of socalled non-specific protein sensitization and immunization.

Whatever may be the facts of the case, the circumstance that the animal (including the human) organism possesses provisions enabling it to oppose and counteract physical and chemical injuries is sufficiently admirable of itself—speaking teleologically.

When we come to the question of a possible hereditary transmission of vulnerabilities, or of predispositions, to certain diseases, it can probably not be said that such predispositions are specific, but they are probably general, assuming various forms of constitutional weakness. On the other hand, there is no doubt about it that the result of the manifestations of defensive provisions, taking the form of general or specific immunity, may be transmitted from mother to child and that such a transmitted, inherited, immunity often is specific. This has been shown to occur in the babies born of mothers in whose blood immune substances against the tubercle bacillus, the diphtheria bacillus and others could be demonstrated. It accounts for the fact that epidemic diseases, which formerly ravaged large populations, have become far less fatal and now find most of their victims among the less resistant small children, while possessing comparatively little power to harm adults.

It is impossible to more than touch upon the various phases of this problem, because a detailed discussion would require far more space than can be devoted to it. Nevertheless, it is of great interest to study and admire the "purposefulness" of creation, if we may offer this clumsy word for the untranslatable *Zweckmässigkeit*, meaning the teleological adaptation of vital processes to the requirements of the organism.

We accuse other people of those acts which our unconscious wants most to perform. It is never wise to rave against the special faults of others, for we give ourselves away.—Ella Barker in "Fielding Sargent."

AN UNUSUAL OPENING

One of our good friends in Denver, Colorado, is obliged to move to a lower altitude on account of his wife's health. His practice runs between six and seven thousand dollars a year and can be increased to ten by a man who can do surgery.

The doctor wants to sell his home at the market price and at terms mutually satisfactory and will turn over the practice.

This is a very unusual and splendid opportunity that is sure to be snapped up right soon. Further information can be obtained through the Managing Editor of CLINICAL MEDICINE, 4753 Ravenswood Ave., Chicago.

A man who has no hobby does not know all the good to be got out of life. A hobby is the happy medium between a passion and a monomania.—Balzac. "La Grande Bretéche."

OF PHYSICIANS AND BEARDS

The British Medical Journal (Sept. 8, 1923) refers to a little essay, entitled "Wherefore Physitians affect to weare great Beards," which forms one of a collection of *Academical Discourses, upon several choice and pleasant subjects,* "written originally in Italian by the learned and famous Loredano, Englished by J. B." and printed at the Blew Bible in Bedford Street London, in 1664. "J. B." appears to have been Joshua Baildon the translator of an earlier volume entitled *The Rarities of the World.*

"The Beard", we read in the opening sentence, "is an ornament to the face, which adds handsomeness and veneration to the person . . . From hence it is that physitians . . . do take an especial care to have great beards." So far, the author is as urbanely respectful to the medical profession as he is to *promissa barba.* But the chance of poking a little fun at the physician was too good to miss. Might it not be that the medical beard was worn to impress the public? Loredano develops this idea with sly gravity:

"Physitians would fain make others believe that they have the skill and art to bestow health, and to prolong the thread of life in despite of fate; and therefore fearing least the reproach of *Medice cura te ipsum* should be cast in their teeth, there is a kind of necessity they should maintain themselves in perfect sanity and a robust agedness, to which purpose . . . they are induced to nourish great beards, which in outward appearance makes them appear much older than they indeed are. Or else the knowledge of their art, requiring a long and laborious study, they by a long beard would fain be throught more ancient, and by consequence more experienced in their art, than otherwise would appear."

Still, it is suggested that the custom might be due to consideration for the patient. Since the beard was a sign of sorrow or grief among the Romans—

"Who knows but that physicians willing to show themselves deeply interested in their patients' sickness and pain, do wear those long beards in token of sorrow?"

While the ironical bent of the author's mind can not be mistaken, he still must be given credit for generosity in his attitude toward the medical profession because, in his concluding passage, he says:

"The beard signifies or betokens (nay adds) confidence and courage. No wonder therefore that they are so much worn by physitians, who are every hour forced to combat and struggle with desperate diseases, nay with death itself."

Does Loredano offer us a true explanation as to why physicians, more than almost any other class of people, affect beards? Not many years ago, all senior students in medical college who could possibly do so let their beards grow, not solely for economic reasons (although time and money were saved thereby) but also for the purpose of appearing older than their years when entering medical practice and making a bid for as much of the medical "business" as might be induced to come their way. The scrubby, scrawny, pityful little facial appendages that, sometimes, were nursed so tenderly as alleged beards necessarily aroused the ridicule of those whom Dame Nature had endowed more generously in that manner, until the thought was advanced that those more hairy ones were not so far away from their anthropoid ancestors as those of smoother facial texture.

Times and customs change. Nowadays, the wearer of an honest-to-goodness beard is a rarity, sufficiently so as to cause passers-by to turn around for a second look. Greater cleanness, changing esthetic ideas and, possibly, the rooted objections voiced by the "fair sect" have sent beards to Coventry.

The story goes that, years ago, a certain woman physician entered the meeting hall of the Chicago Medical Society and was astonished to find so many smooth faces on old shoulders, which she had been accustomed to see adorned with more or less luxurious hirsute growths. On asking for the why of the thus, she was informed that the beards had been sacrificed to the god of antisepsis. "Hm,"

she snorted, "why don't they shave their fool heads?"

He who sings frightens away his ills.—Cervantes.

STANDING WATER BREEDS FEVER MOSQUITOES

Although yellow fever apparently no longer occurs in the United States and its future occurrence here is most unlikely, the socalled yellow-fever mosquito, which is perhaps the commonest household mosquito in the Gulf States, has been shown to be responsible for the carriage of dengue or "breakbone" fever.

The immediate justification of this note is the fact that, during the summer of 1922, it has been estimated, there were 600,000 cases of dengue fever in the southern United States. Dengue fever is seldom fatal, but it is the cause of total incapacity of the patient for a number of days which may extend into weeks. From this fact can be estimated the economic loss to the South during the summer of 1922, when it might all have beeen avoided at an absurdly low cost and with comparatively little trouble. The importance of control measures, which are readily applied, is obvious. Farmers' Bulletin 1354, "The Yellow Fever Mosquito", by L. O. Howard, chief of the Bureau of Entomology, describes the life history, habits, and distribution of the yellow-fever mosquito, its relation to dangerous diseases of warm countries, and the best remedies against this dangerous insect.

It was conclusively shown, in 1900, by scientific experiments under the direction of Dr. Walter Reed, that this mosquito is solely responsible for the spread of yellow fever, and it has since been demonstrated that the mosquito also carries dengue fever.

The yellow-fever mosquito is essentially a house mosquito and its larvæ are found practically exclusively in artificial receptacles in and about houses. Large earthen jars for drinking water are, in the tropics, its unfailing habitat. Rain-water barrels and tanks are common sources of abundant supplies of these mosquitoes. The larvæ also occur in sagging gutters containing rain water, in tin cans, cesspools, horse troughs, water-closet tanks, drain traps, cemetery urns, holy-water fonts in churches, water pans in chicken yards, and water receptacles of grindstones.

The most important remedy suggested is the abolishing of standing water wherever possible, in order to eliminate breeding places. This includes every imaginable receptacle that may contain even a little water. Where standing water can not be abolished, openings to such receptacles as rain-water barrels, tanks, and cisterns should be screened to prevent mosquitoes from laying their eggs in them.

Surface water that can not be drained away should be sprinkled at least every two weeks with ordinary low-grade kerosene or fuel oil. This will cover the surface and suffocate immature forms, and also protect the water from egg laying by mosquitoes. The introduction of fish into fountains and artificial pools is beneficial where such receptacles can not be screened or treated with kerosene.

The use of wire screens with not less than 20 strands to the inch excludes mosquitoes from houses, and other buildings, rooms, and porches. Bed canopies are advisable in unscreened houses. Houses may be cleared of adult mosquitoes by burning in tightly-closed rooms 1 pound of pyrethrum powder or 2 pounds of sulphur for each 1,000 cubic feet of contained space.

THE NERVOUS CHILD

"The socalled nervous child is frequently an untrained child of untrained and weak parents. It has been estimated that 50 percent of the nervous children belong in this group. The children may be over-stimulated by excessive attention, as by rocking and coddling. The young, inexperienced mother is frequently confused by her task. Her new responsibility may make her extremely nervous. She shows anxiety if he does not sleep, or she becomes frenzied if he does not sleep. She over-clothes him lest he catch cold. She picks him up the moment he cries. She paces the floor with him or sings to him. She fails to feed him regularly. In short, she fails in the normal training process." Dr. Isaac A. Abt, in the December issue of *Hygeia*, stresses the importance of the influence that the attitude of the mother has on the temperament of the child, who readily imitates her anxiety and is unconsciously impressed by the air of confusion that reigns when she fusses and worries over him. As the child grows up he becomes more and more imitative and susceptible to the atmosphere around him. He learns that he is delicate or that he is naughty; he listens to the stories told of his pranks and nerves. The feelings of personal inferiority that may be thus engendered often have the most serious consequences in after life. A child's toys should be simple. Elaborate and complicated playthings teach him extravagance and selfishness and he becomes discontented and begins

to demand more and more in the way of excitement and variety. Fear is a normal part of childhood, but it should never be played on for discipline; childhood fears are a potent source of nervousness in later years. In addition, fear is a shock that jars the whole nervous system and its effects last a long time. To avoid and remedy nervousness, one of the greatest essentials is healthful occupation. Every normal child should have a certain amount of work assigned to him. It produces a feeling of satisfaction and self-appreciation, keeps the attention fixed and avoids fanciful dreaming. This of course must not go to the extent of fatigue, but regularity of well chosen and interesting work is one of the best safeguards against nervousness.—*Hygeia.*

Without these two: imagination, which is the gift of the poet, and humor, which is the dower of the philosopher, no man can see life whole.—"The Mirrors of Washington."

THE LEPRA COLONY AT CARVILLE, LOUISIANA

Last spring, Congress provided $650,000 for the construction of buildings at Carville, La., where the lepra patients in this country are cared for. That sum was believed to be sufficient for all present requirements.

Unfortunately, the cost of construction has increased so greatly that the funds are sufficient only for the erection of seventeen cottages housing twelve patients each, together with a dining room and kitchen building, additional power plants, water supply and sewage disposal units.

The infirmary, which is needed for the treatment of these patients, who are blind and crippled, can not be erected at this time and not until further appropriations are granted.

We are informed that there are now 174 lepers at Carville, every available bed being filled. The patients include men and women from nearly every state in the Union. The new buildings under construction will add 204 additional beds and these will be immediately utilized, since there is even now a waiting list of more than one hundred patients who wish to enter the institution.

It is estimated that there are more than one thousand lepers in the United States whom it is desired to segregate as soon as facilities can be provided.

One-fourth of the inmates at Carville have become totally blind from the disease and the mutilations, especially of hands and feet, resulting from its ravages, remind one forcibly of descriptions laid down in the Scriptures.

Construction of the new buildings will start immediately and will require several months. It is to be hoped that further funds will be voted so that all lepra patients in the country can be taken care of.

THE IMPORTANCE OF A CLEAN MOUTH

The method of energetic brushing of teeth and gums that is advocated today and taught as a part of oral hygiene has been objected to by some oral surgeons on the plea that the vigorous brushing may cause injuries to the mucous membrane of the gums, inviting the localization of pathogenic microorganisms. It has also been claimed that those dentifrice preparations that contain, as essential constituents, more or less coarse abrasives, act in like manner and may increase and enhance possible injury to the oral mucosa.

This question has interested us sufficiently to seek the opinion of some of the leading dentists and oral surgeons in this country. The replies make interesting reading.

We are planning to utilize these replies in a special article on the subject that will be published in an early issue of CLINICAL MEDICINE. We believe the subject to be of great interest and we shall submit it for more general discussion.

THE STUDY OF CANCER

Speaking of cancer, the March issue of *The Canadian Practitioner* (134 Bloor St., West, Toronto) is devoted entirely to the study of the causes, prevention and treatment of cancer. It is an excellent number and contains many useful articles. As to the cause of cancer, the editor, reviewing the various articles, reminds us that we do not know that cancer is caused by a parasite, heredity, lack of vitamines, tomatoes, canned meats, environment, etc. We think, however, that the following are at least contributory causes: habits of civilization, chronic irritation, faulty diet, excesses of various kinds, and constipation with stagnation of material which decomposes, becomes putrid, and poisonous.

This leads us back to the article contributed to the *Practitioner* by Dr. A. C. Jordan, entitled "Stasis, the Main Cause of Cancer". In this communication, Doctor Jordan shows that cancer is brought about largely by continued stasis and subsequent irritation through which the tissue fluids are perverted and the develop-

ment of abnormal cells and cell masses (cancer cells) is fostered.

While the serious harm following upon stasis, intestinal and otherwise, has not always been considered directly in connection with cancer causation, its enormous possibilities for harm have been recognized for many years and even before Arbuthnot Lane made it the basis of his favorite teachings. The importance of "clean up, clean out and keep clean" can not be overestimated whether in regard to a possible malignant disease or in relation to minor disturbances of health.

We congratulate the editor of *The Canadian Practitioner* on the very interesting and instructive number that he has produced and which condenses much of the modern cancer lore in concise form. We might refer especially to the importance that ray and radiation treatment has assumed in recent years and which is illustrated well in the articles referred to.

Propriety of thought and propriety of diction are commonly found together. Obscurity and affectation are the two greatest faults of style. Obscurity of expression generally springs from confusion of ideas, and the same wish to dazzle at any cost, which produces affectation in the manner of a writer, is likely to produce sophistry in his reasonings.—Macaulay, "Machiavelli."

OPEN AIR SCHOOLS IN ARGENTINA

Dr. Teodoro A. Tonina, Inspector Physician of the School "7 de Septiembre" in Buenos Aires, in a beautiful article published in *La Semana Medica* (January 17th, 1924), discusses the great importance of open-air schools for delicate children and gives a complete report of the splendid work accomplished by these schools in Argentina.

There are, in Buenos Aires, several open-air schools which are institutions devoted to the physical and intellectual training of delicate children and those suffering of tuberculosis or inclined to that disease.

Open-air schools in Argentina, says Dr. Tonina, fulfil the desideratum of the great healer of heliotherapy (Rollier). They are the best preventative of tuberculosis.

These institutions perform a triple function: pedagogical, social and sanitary. The pedagogical function gives the children an intellectual education and, at the same time, stimulates their physical development. The social function is evident in the coeducation of children of both sexes. The sanitary function of open-air schools gives children their great universal remedies: sunshine, air, water, exercise and dietetics, which help them to attain normal health.

The children are given all kinds of open-air exercises. Large fields are provided for this purpose where the children have a great variety of apparatus for their physical training. Teaching methods are based strictly on nature, and mental education is in accordance to mental evolution of children and the necessities of practical life.

Dr. Tonina, in his discussion of the program for education of abnormal children, reaches several conclusions which may be abstracted as follows: Open-air schools must have a limited number of pupils. Lectures are to respond to the place and time of the day at which they are given. They should appear to the children as if they were extemporized so as to arouse their curiosity and gain their interest. Such lectures are to be given in the open air. The duration of lectures depends on the duration of the children's interest. This is the best guide for the teacher. The instructors must speak clearly and precisely, always trying to avoid tediousness and to keep alive the interest.

"The child should be made an eternal child, so that the adult will always come back to his memories of childhood. Child life is the only comparison to nature. Its work is love; its pathway is simplicity; its purpose is the future."

The object of open-air schools—says Dr. Tonina—is health. In these institutions, children live in close contact with nature and endeavor to strengthen and nourish their bodies and to educate their minds. The schools are located in the country where a limited number of children are grouped together for coeducation as well as for physical and intellectual training.

AN UNUSUAL OPENING

On account of declining health, J. Wallace Hewetson, Lyons, Ill., intends, in the very near future, to give up the practice of medicine. This will leave a desirable vacancy for another physician and the doctor will be pleased to get into communication with him.

The town has a population of nearly 4000. Largely industrial. Good transportation and about twenty miles from Chicago. A growing community. Good opportunity for any man between thirty-five and fifty.

Leading Articles

The Contributory Etiology, Prophylaxis and Calcium Role in Hayfever and Asthma*

By ABRAHAM R. HOLLENDER, M.D., Chicago

Deficiency Diseases of the Upper Respiratory Tract

RECENT investigations have demonstrated that certain of the socalled vasomotor or angioneurotic diseases of the upper respiratory tract are due to a deficit of blood calcium. Chief among these are hayfever, hyperesthetic or vasomotor rhinitis and bronchial asthma. In a preliminary report which was published in the *Journal of the American Medical Association*, a short time ago, it was pointed out that the calcium content of the blood serum is invariably low in hyperesthetic rhinitis, and frequently so in hayfever and bronchial asthma. It was also shown, however, that, in the latter two diseases, there are instances in which the blood calcium is normal.

In a second report read before the Chicago Medical Society, the results of a more extended study were given. At this time, it was suggested that this group of vasomotor diseases which showed normal blood calcium findings was probably due to blood phosphorus deficit, although sufficient data had not been collected to submit a report along these lines. Attention was also called to the importance of contributory etiology.

It is my intention to elucidate this latter phase. While the contributory etiology has at no time been neglected, the earlier writings have purposely omitted a consideration of it. It is therefore timely to go into this division of the subject now.

From the standpoint of comparison, it is of interest to speak briefly of some of the earlier views regarding the possible causes of hayfever and asthma. As early as 1897, S. Solis-Cohen spoke about idiosyncrasy as being a real condition in hayfever. He mentioned the idiosyncrasies to certain drugs, viz., salicylic acid, quinine, opium, etc. as similar to idiosyncrasies that patients exhibit toward the different irritants capable of producing hayfever. Even before this writing of S. Solis-Cohen, Bishop announced his theory that "an excess of uric acid in the blood causes hayfever, or nervous catarrh." And, a short time later, Grayson called attention to his view, namely, that hayfever is due, fundamentally, to defective nutrition. He wrote "By defective nutrition, are meant all the phenomena of metabolism — constructive, destructive, and eliminative. Disturbance of one means disturbance of all. With continued absorption of toxic materials from the intestinal tube, or with persistent incomplete elimination of the products of suboxidation, it is only a question of time when autotoxemia will provide us with any of the functional neuroses, from hayfever and asthma to chorea and epilepsy."

In late years, favor has been given principally to the protein theory of sensitization. In fact, protein sensitization has been accepted as the etiology in hayfever and the other hyperesthetic diseases. The studies of Selfridge, Hollopeter, Scheppegrel, Kœssler and others have done much to affirm these views. Their work undoubtedly has been of great value and is indeed enlightening, particularly with reference to the influences of various pollens and proteins on the nasal mucous membrane.

At no time, however, have any of the adherents of protein sensitization suggested the possibility of some underlying factor. The question of individual idiosyncrasy has frequently been considered and nothing new in this connection can be suggested. This is also true to a great extent with reference to the contributory etiology, although too much cannot be said at any time regarding the influence

*Supplement to report published in the *Journal of the A. M. A.*, Dec. 15, 1923, 81:2003.

of nasal pathology and pathology elsewhere in the body.

Blood Chemistry Studies in Hayfever and Asthma

With due regard to the various opinions expressed by early investigators, and the accepted etiology of protein sensitization, the fact remains that a plausible constitutional basis for the vasomotor diseases must be demonstrated. Study in the blood chemistry of the vasomotor diseases has shown conclusively that they are deficiency diseases. The blood-calcium findings have been found to be low in most instances. The result of this study does not in the least underestimate the work which has been done in protein sensitization. On the contrary, the determination that these hyperesthetic diseases are calcium-deficiency diseases only tends to strengthen the belief that proteins and pollens are the irritants and that the deficiency in blood calcium is the underlying factor, or "constitutional element."

As early as 1897, Grayson recognized that a "constitutional element" played an important part in hayfever, although at that time he was unable to determine what this element was. In one of his papers, he concludes that the three factors which make up the etiologic combination of hayfever are: An external irritant, some intranasal abnormality, and a constitutional element—"defective nutrition."

Prophylaxis and Its Management

Thus far, much has been said regarding the possible causes of hayfever and, in several other papers, the treatment of hayfever, hyperesthetic rhinitis and bronchial asthma is discussed at length. Although the treatment of these conditions is undoubtedly of great importance, the prophylaxis is of still greater moment. The sufferer from seasonal hayfever and paroxysmal asthma would much prefer to have the attacks averted, rather than treated after they occur. As this is the rational plan to pursue, I have recently advocated the prevention of the vasomotor diseases. The following program of management is suggested, inasmuch as it has given very favorable results.

First, a large enough specimen of blood, say about 15 Cc. should be taken, so that a thorough and complete blood-chemistry study may be made. The calcium, phosphorus and magnesium should be measured. If a deficit in blood calcium is determined, this should be considered as a condition synchronous with a state of toxemia. This fact must not be overlooked. To attempt to raise and fix the blood calcium without proper attention to this phase of the problem, is indeed an error. There is a close relationship between hayfever, asthma and the angioneurotic diseases. Also, there are frequent occurrences of hayfever in patients who have other toxic conditions, such as urticaria, gout, et cetera. The hayfever is usually much relieved by the correction of the toxemic state and the raising of the blood calcium, if this has been shown to be subnormal.

If the toxemia is due to intestinal disorder, this must have proper management. The toxemia may, however, be dependent upon pathology in the nose, throat, teeth or chest, or in any combination of these. Intestinal toxemia and nasal pathology are vital considerations, especially so in the presence of a low blood calcium. Elimination of the toxemic state is in itself a means of raising the blood calcium, and this, together with the means at our disposal for increasing the calcium content of the blood, affords a good method of prophylaxis in seasonal hayfever. For, in this disease, the prophylactic treatment may be conducted during an interval of from one to two months prior to the usual hayfever season. In bronchial asthma, the treatment is best administered between the paroxysms. Hyperesthetic rhinitis, being an all-year round condition, does not lend itself to any program of preventive treatment.

The methods of raising the blood calcium are fully considered in the preliminary report and enlarged upon further in the second report. The details will therefore be omitted. One of the following plans will lend itself to the individual case; namely, oral, intramuscular or intravenous administration of calcium. Orally, the lactate is best suited, while, for intramuscular or intravenous use, sterile solutions of a 5-percent calcium chloride solution give satisfactory results. Concomitantly, thyroid extract or parathyroid extract is given by mouth.

The Dosage of Thyroid and Parathyroid Substance

The dosage of the glandular substance prescribed in combination with the calcium salt is of considerable importance. Indeed, this phase should have the benefit of much study. Obviously, no stereotyped rule can be laid down, for no two individuals will show the same tolerance for thyroid or parathyroid extracts. Individualization in this connection is best accomplished, first, by studying the metabolic rate, and second, by having a most comprehensive report on the physical status of the patient. For this purpose, the close cooperation of an internist is not only essential but

it is absolutely necessary for success.

In the past, the dosage of thyroid extract has varied in adults from 1/20 to ½ grain, two or three times daily. It must be said, however, that it is not often that more than ¼ grain of the thyroid substance per dose is required, although the frequency of dosage is again dependent on the severity of the disease, the tolerance of the individual and the rapidity with which he responds to the action of the substance.

There is no relation between tolerance and the duration of time in which a patient will respond to any glandular extract. This is easily understood when one knows from experience that some individuals will tolerate thyroid extract in small doses without any untoward reaction over a comparatively long period of time, while others, again, will promptly show an intolerance to the extract with all the symptoms of a mild or severe thyroid intoxication.

In children, the same facts hold. The dosage must be guaged according to the indications at hand. As little as one one-hundredth of a grain of thyroid substance, two to three times daily, in combination with a calcium salt, has given favorable results.

Of the parathyroid substance, the dosage ranges from 1/50 to 1/10 grain, one to three times daily. Owing to many failures with parathyroid, I have not used it as freely as the thyroid substance, although I have had occasion to prescribe it in many instances in which I was of the opinion that its action would be more favorable than that of thyroid extract.

Rationale of Thyroid and Parathyroid Substance in Hayfever and Asthma

The indication for thyroid or parathyroid substance in the deficiency diseases, especially with our knowledge and evidence of blood calcium deficit and its underlying toxemic state, resolves itself into the problem of equilibrium between the sympathetic and the parasympathetic systems, represented by the thyroid and the parathyroid glands respectively. In other words, the maintenance of an endocrine balance is essential to a normal existence. Any disturbance of this balance results in disease, dependent on which of the systems has been affected.

Practically identical views are voiced in the report of H. W. C. Vines, of Cambridge, which was published in the *British Medical Journal* of November 10, 1923. Vines concludes, "The rationale of parathyroid therapy is therefore simple; it is a means of reestablishing the normal endocrine balance of the body, which infection has disturbed; adequate resistance to disease is not a function either of the sympathetic system or of the parasympathetic system, but of the equilibrium between them."

Vines believes that the great success of prophylactic treatment lies in the fact that it is usually carried on when the subject is healthy and "is in a state of endocrine equilibrium. Any tissue performs its functions best when under physiologically normal conditions, and it cannot be supposed that the tissues which are concerned in the mechanisms of defense are exceptions to this rule."

Causes of Failure

Frequent instances of failure have resulted from the employment of inert or inactive organotherapeutic products. Especially is this true with reference to parathyroid substance, although many thyroid preparations have failed to establish the anticipated response to their administration.

The failures encountered have attracted the attention of several investigators, with the result that commercial houses that market organotherapeutic substances have been urged to standardize their products.

Vines advocates strongly the standardization of parathyroid substance, having been impressed with the inertness of this and other glandular preparations. He suggests a plan of standardization which in principle is briefly as follows:

"It is generally held that the parathyroid glands have two functions: they regulate calcium metabolism and they are in some way able to prevent intoxication by guanidine and its derivatives. On this second property the standardization method is based. The principle is as follows: If an active parathyroid preparation is incubated at 37° C. with a known amount of guanidine in solution, the amount of guanidine reckoned as picrate at the end of the incubation period is found to be less than at the beginning of the test. Only one function of the glands is therefore tested, but there is reason to believe that, if the preparation is deficient in this function, it will also be deficient in the other."

Ultraviolet Therapy

The most expeditious method of raising the blood calcium is had by combining the drug treatment with the ultraviolet light. In fact, the fixation of the calcium is rendered ideal only by the employment of the mercury vapor quartz lamp. The influence of the light-rays from this lamp has proved so efficient in raising and fixing the blood calcium in other

deficiency diseases, such as rickets, tetany, etc., that its application in the deficiency diseases of the upper respiratory tract is only logical. The technic is described in the preliminary communication, so that repetition here is intentionally avoided.

Summary

1.—Recent investigations have demonstrated that hayfever, hyperesthetic rhinitis and bronchial asthma are calcium-deficiency diseases.

2.—It has been shown, also, that the "constitutional element," or underlying factor, is a deficit of blood calcium and that proteins act only as irritants to the nasal mucous membrane.

3.—The prophylaxis, or prevention, of the deficiency diseases of the upper respiratory tract has in the past been much neglected.

4.—A blood-calcium deficit is synchronous with a state of toxemia and rigid attention to this phase is an important element in the prophylactic management of hayfever and asthma.

5.—In the administration of calcium-thyroid therapy, no stereotyped rules for dosage can be laid down.

6.—The rationale of thyroid and parathyroid therapy lies in the maintenance of an endocrine equilibrium.

7.—Causes of failure are due to inactive organotherapeutic products marketed without proper standardization.

8.—The ultraviolet light is the most valuable adjunct to the drug therapy and is finally depended upon to fix permanently the calcium in the blood.

Bibliography

Frank J. Novak, Jr., and Abraham R. Hollender. Influence of Ultraviolet Irradiation on Calcium Content of Blood Serum in Hayfever, Hyperesthetic Rhinitis and the Asthmas: Preliminary Report, *J. A. M. A.*, 81:2003, December 15, 1923.

Frank J. Novak, Jr., and Abraham R. Hollender. A New Treatment for Hayfever, Hyperesthetic Rhinitis and Bronchial Asthma Based on the Calcium Content of the Blood Serum. Abstracted in the *Bulletin of the Chicago Medical Society.* (To appear in *Illinois Med. Jour.* shortly.)

Grayson, C. P. The Rational Treatment of the Constitutional Factor in the Causation of Hayfever. *Therap. Gaz.*, Detroit, 1897, 3 S. xiii, p. 653.

Bishop, S. S. A New Pathology and Treatment of Nervous Catarrh. *J. A. M. A.*, 1893, xxi, pp. 798.

Vines, H. W. C. The Rationale of Parathyroid Therapy. *Brit. Med. Jour.*, Nov. 10, 1923.

Vines, H. W. C. The Parathyroid Glands—Their Function and Use in Common Ailments. *Amer. Med. Jour.*, Dec., 1923.

Selfridge, G. Endocrine Glands and Their Relation to Vasomotor Disturbances of the Air Passages, With the Past Year's Report. *Calif. State J. M.*, San Fran., 1919, xvii-106.

MacKenzie, G. M., and Baldwin, L. B. Local Desensitization in Hypersensitive Individuals and Its Bearing on Prevention of Hayfever. *Arch. Int. Med.*, 28:722, Dec., 1921.

Hollopeter, W. C. Hayfever: Its Prevention and Cure. 1922, Fourth Ed., Funk & Wagnalls Co., New York and London.

Kern. Maximilian. Organotherapy and Its Relation to the Specialist. *Amer. Jour. Clin. Med.*, Sept., 1922.

30 North Michigan Ave.

Serological Experiments in Cancer Therapy

By WILLIAM HELD, M. D., Chicago

HAVING recently returned from Europe, where I had the privilege of obtaining personal instruction from Professor Abderhalden, to whom we owe our knowledge of defensive ferments, I was struck with the lack of understanding that obtains in America concerning his work and the Abderhalden reaction. Only few students have mastered the fundamentals underlying Abderhalden's teachings while the majority of physicians have foregone the benefits which knowledge and application of the Abderhalden test imparts to doctor and patient alike. One physician told me that the trouble with Abderhalden's test is, that only Abderhalden can make it. Such opinion is based on ignorance and failure to understand Abderhalden's printed instructions. The student who is willing to apply himself in earnest to the work will find that scrupulous adherence to every step as taught by Abderhalden will result in the same success. To remember that the diagnostic value of the test, in cancer, for instance, might deter the surgeon from cutting into an inoperable tumor and thus spare the patient's life for some time (which would not be the case after metastatic growths have been caused by the ploughing of the knife), that alone should induce a more general application of the test.

By the dialyzing process, first applied in the diagnosis of pregnancy and later in cancer and dementia præcox, we can now determine whether or not a suspected organ is pathologically affected. In dementia præcox, the patient's serum dialyzes (splits up into peptones, digests) testicular substance and to a lesser degree brain cortex. It is noteworthy that Mott and Hutter, in France (*Brit. Med. Jour.* 1922) tabulated 100 cases of dementia præcox in which the pituitary body was smaller than normal. Bayard Holmes, Sr., of Chicago, and others have shown the connection existing between dementia præcox and the testicles.

He who understands the principle of dialyzation is greatly encouraged by such findings because they demonstrate the soundness of the

theory from which Abderhalden's work has sprung.

Think of the specificity of the Abderhalden test. If a person wears a tight collar or has been choked, the blood serum of such person will dialyze thyroid gland tissue.

A doctor once came to the physiological department of the University of Halle, in Germany (where Abderhalden holds forth), and complained that the report on a specimen of serum, which he had submitted for dialyzation, read "positive for uterus", which means that the submitted serum proved capable of splitting uterine tissue. The doctor was loud in his protestation to the effect that there was absolutely nothing the matter with the uterus of the patient; that he had thoroughly examined by instrumentation and digital manipulation and that there was neither growth nor inflammation. The fact was, that his examination was so thorough as to have caused enough trauma to release some of the elements of the uterine cells into the system (where they had no proper place) and, of course, the reaction test detected the presence of these truant cells. In pituitary involvement, that gland is often affected long before other glands, by sympathetic or vicarious affinity, become implicated. Then, after such general involvement, pluriglandular treatment is attempted. How much better would it be to subject the patient's blood to the Abderhalden reaction as soon as signs of pituitary deficiency appear (thus making a doubtful diagnosis a certainty) and then to direct treatment to the pituitary deficiency.

The gist of Abderhalden's theory, very briefly stated, may be expressed thus: Whenever a cell or a cell product loses itself into the blood stream or tissue, that is, when it has left its mother cell or natural colony *before having been completely acted upon* by the specific ferment of its natural habitat; when migrating to other parts as *unfinished* products, such cell or cell product constitutes a *foreign element* and is a trouble maker. It arouses antifermentative action. It calls for help, as it were. It does not fit in any place and, this state of condition, can be detected by dialyzation. So, we can tell whether a specimen of blood serum comes from a pregnant woman, a cancer or sarcoma case, dementia præcox, tuberculosis or any otherwise infected or disturbed system. The endocrinologist, by this aid, can place the accusing finger upon the particular gland requiring regeneration.

Retinger, of Chicago, stated that he has not only diagnosed but also *located* tumors of the brain by the Abderhalden test, having found that different parts of the brain tissue react specifically. The entire subject is pregnant with etiological and therapeutic possibilities, which indeed have been utilized to a great extent.

Researches in Cancer Therapy

Of particular interest appears at this time the pioneer work done by Abderhalden in connection with cancer. The observing student can not fail to see the approach of the time when the entire cancer research work and therapeutic experimentation will concentrate around the basis furnished by Abderhalden's research.

The results obtained with an anticancer serum developed by Abderhalden were so encouraging that Abderhalden felt justified to suggest to me that I pursue, along this line, in my further resereaches, work that came to a forced standstill on account of the war. Space does not permit the detailed description of tests made; but suffice it to say, that Abderhalden, Kohlhardt, Fichera, Blumenthal, Lukenheim and others have succeeded in completely destroying tumors in animals and human patients by administration of anticancer serum. Be it understood that, while no claim for a cure for cancer is made, the impressive fact remains that all patients who accepted the treatment were moribund and that, while the cancerous growth disappeared, the patient's blood still reacted positively for cancer in the Abderhalden test. Yet, they were (those who did not die) discharged from the hospital and were able to continue their ordinary work.

Abderhalden and his followers who have mastered the technic of his dialyzing method know that, whenever a heterogeneous substance enters the system, the appearance of such foreign elements is answered by the production, or release, of protective ferments. These defensive ferments attempt to split up the foreign elements into smaller components. To the extent to which this digestion process succeeds, damage to tissue and blood is prevented and repaired. Upon the elaboration of this theory and the modification of the therapeutic hints which these facts entail, most important measures have been based. The cancerous growth, the tumor, appears to supply the blood stream with tumor cells and their products, which require ever increasing armies of defenders (ferments), and this demand can not be sufficiently supplied. Finally, the system is defenseless, the cancer cells proliferate and grow in a fashion which Bulkley termed a "riot of cells"; unchecked their elements in-

vade the organism, the cancer gains due to the inadequate presence of defensive ferments and emerges supreme from the battle. Cancer death, then, is due to lack of defensive ferments.

Meeting the Shortage of Cancer-defensive Ferments

The very appearance of cancer releases armies of defenders which would effect a cure save for the fact that there are not enough anticancer ferments. There is too much cancer. The quantity of defensive ferments is *automatically* regulated and it is in proportion to the cancer growth present. And, this quantity is always inadequate to cope with the excess of cancer elements. Were we able to introduce enough cancer-devouring (splitting, dialyzing) ferments, the cancerous tumor would be digested and carried off.

The production of anticancer ferments is brought about by inoculating animals with the patient's blood serum. The animal's economy at once produces anticancer ferments in response to the invader. After several days, the serum of the animal so treated is withdrawn and injected into the cancer patient whose serum has been used in the animal inoculation. That the blood serum of an animal, into whom cancer serum has been injected, acquires the faculty to split cancerous tissue, is proven beyond cavil by the Abderhalden test. The test, before inoculation, is negative while, after injection, it is positive for the specific cancer tissue prevailing in the patient's system.

In order to overcome any anaphylactic reactions, I have adopted the course of rendering the animal's blood homologous to man's by the injection of ape's blood before inoculation with the cancer serum is undertaken.

The cancer-devouring characteristic of juice or serum from cancer patients is absolutely proven, and thereby attaches the intense interest and the research work that is being conducted by men interested in the cancer problem.

918 Buena Ave.

The Evolution of Chronic Diseases Of Non-Contagious Origin

Their Cure by Entero-Antigens

By B. SHERWOOD-DUNN, Nice, France

Officier d'Académie, Ex-Assistant Professor, Tufft's University, Ex-Colonel Medical Corps of the Army, Corresponding Member, Société Obstétrique et Gynécologique de Paris

MY publications respecting treatment by means of Entero-Antigens have caused such manifestations of interest, as exhibited by letters received from widely separated states, that I am encouraged to return to the subject and to elaborate the theories upon which the treatment is based and the clinical results that have been obtained.

Having the intention of making reprints of this paper and with a desire to make clear to the lay reader the rather technical argument that follows, I want to commence by answering the following:

Questions

What are colloids? What are antigens? What are antibodies? What is anaphylaxis?

Books have been written in answer to each one of these questions and there is no simple explanation that I could give here that would not be open to criticism from a scientific standpoint. But, in hopes to make clear in some degree to the reader, in simple language, this highly complicated problem, I will say that, in the process of intestinal digestion, albumins are transformed into amino-acids in which form they are readily absorbed in the system. If albumins in any form pass from the intestinal tract into the circulation, as albumins, they are *"colloids"*.

When these colloids come into contact with the cells of the organism, where as amino-acids they would be absorbed and utilized, the cells throw out a substance in the effort to break up and digest this albuminous matter so they can make use of it; this substance so thrown out is *"Antibody"*. All *"Colloids"* are *"Antigens"*. For want of a better term, all those substances which provoke the formation of antibodies are grouped as antigens. When the dose of colloids or antigens is in excess of the ability of the cells to break up and digest them, they remain as a foreign substance in the economy, giving rise to certain pathologic symptoms. This forms a condition of *Anaphylaxis*. Anaphylaxis is a condition of pathologic sensibility of the system to the action of a substance (antigen) which normally is not noxious, but which gives rise to certain pathologic symptoms each time it is introduced into the economy by no matter

what route or in what form.

If the reader will use the foregoing explanation as an index, it will help to clear up some of the involved arguments that appear later on in the development of my subject.

Medical Aims

Medical science has for its object, to teach us why and how an organism becomes diseased, what constitutes this disease and how a cure is effected. As a basic principle, if one is to be confident of the correctness of his methods in the treatment of disease, the therapeutics should be based upon a thorough knowledge of the chemical reactions of the system, the nature of the reactions provoked by the malady and of those induced by the medication.

When we discovered that the introduction into the animal organism of pathologic bacteria, attenuated or sterilized, protects this organism against later infection, we thought we could succeed without much difficulty in demonstrating the bacteria of all the infectious diseases and in preparing preventive vaccines or curative sera for them all; and it was hoped at the same time that we would become able to explain the mechanism of all these reactions. In reality, the investigations have met with difficulties as numerous as they were unforeseen and, today, after half a century of unremitting labor, there are very contagious diseases of which the germs are unknown. There are others, like leprosy, syphilis, malaria, the trypanosomiases, of which the germs are known but cannot yet be cultivated on artificial media, and again others, like psoriasis, eczema, cancer, etc., which are not contagious and of which the germs are unknown but which have many characteristics in common with diseases of infectious origin.

We can start upon the hypothesis that the normal functions of the body present a physiochemical equilibrium that is practically constant; all pathological manifestations give rise to a chemical reaction that disturbs this normal equilibrium; no matter what therapeutic measure is employed, its choice should be made with the sole object of restoring the functions of the system to their normal equilibrium.

What Is Life?

As the study of physical and biological phenomena of the constitution of matter and of its manifestations becomes more extended and more precise, it tends to prove that the perpetual changes noticed in all things consist in an uninterrupted series of decompositions and syntheses and, as the transformations of any one substance have a beginning and an end, it can be said that any substance in process of change undergoes an evolution of which the different successive phases are determined by the physical and chemical properties of its constituent elements.

Decompositions follow as a rule a very uniform path and lead to simple elements which may be considered as definite. Synthesis on the other hand is itself subject to evolution: it leads step by step to compounds that are more and more complicated, varied and numerous and it is impossible to predict any end to these changes.

In order to arrive at a comprehensive understanding of the hypothesis I purpose to discuss, it becomes necessary to repeat that the final result of natural synthesis is the most complicated and the most perfect product known to us in the chemical species which we may designate as the albuminoid particle. It develops as an individual and, as a species, in its evolution it must obey the law which obliges every substance to replace in its complexes *the less stable or more soluble compounds by more stable or less soluble compounds.*

The particle can fix salts by chemical affinities of its molecules, it can absorb them by osmosis and can exchange salts as well as water with the exterior. It can also by the same affinities fix itself to other units and form much larger, more voluminous granules. It is thus not the molecule but the colloidal particle which is the chemically indivisible unit of living matter.

What is the mechanism of the reconstruction of the living particle? The most recent researches assume that animal particles can assimilate untransformed amino-acids and they cease to live if they have not certain preformed amino-acids (tryptophane) at their disposal; which leads us to believe that they are incapable of constructing these substances from the simplest chemical units.

Van Slyke has shown that tissues absorb amino-acids; the presence in the blood of amino-acids has been proved by Delauny, and the work of Fischer, Kossel and others on the polypeptids permits us to conceive of the construction of a biologic particle of a still more complex composition and constitution.

If we imagine that a particle of a certain composition can attract and assimilate by a total of its physiochemical properties the amino-acids of which it is composed, as a crystal attracts and fixes by analogous prop-

erties molecules identical with those of which it is composed, we can readily understand the autoreconstruction of particles of the plasma with the materials which are found in abundance in the medium in which they are constantly bathed. And we do not have to consider a "ferment" whose existence remains to the present unproved.

Colloids may be nutritive, but only after having undergone a complete digestion, a disintegration into free molecules. They will always be pathogenic when, in the colloidal state, they have penetrated by any way whatsoever into the interior of the organism, which must then digest them without being specifically adapted for this function.

In an organism composed of a combination of different tissues and of organs and glands with special functions, reactions will obviously be much more complex. In these cases, a disturbance will never be strictly limited: It will always have multiple effects. The intervention of the liver, spleen, suprarenal capsule, thyroid and parathyroid glands, hypophysis, and especially the *central nervous system* may greatly modify the rate and extent of each reaction and may infinitely complicate the study of the mechanism. But, whatever these complications may be, whether the objective symptoms are caused by a purely local reaction or a reflex action, it is impossible to imagine that any modification whatever in the normal state of the organism could be produced by anything other than a disturbance of the nutrition of the particle by a modification of the physiochemical equilibrium of the particle.

The First Step in Disease

Thus, in the last analysis, an organism can be nourished only by simple chemical compounds and can assimilate them only in proportions identical with those of which they are composed in its colloidal complexes. The absorption by the interior of the organism of a complex of different composition and constitution will always result in the creation of a new and abnormal state of equilibrium. This is a general biologic law applicable to all the manifestations of living matter without excepting the evolution of conscience and the formation of states of mind. In analyzing the evolution of thought, we find that a mind can directly absorb only simple ideas and can assimilate them without trouble in proportions identical with those in which its own complex of ideas is formed. Complexes of ideas foreign to its understanding, and which one may compare to specifically different particles, can be assimilated only on condition that they can be digested, analyzed or dissociated. If this is so, a new state of psychic equilibrium will result by a process analogous to that which induces modifications in the states of chemical and physiological equilibrium of the particle and cells.

A new theory, a new religion, a new political or social system introduced too suddenly or in too large a dose into subjects insufficiently or badly prepared will always upset the equilibrium. This is a pathologic state quite as serious in the soul of individuals and of societies as too large a dose of antigens in the cell and in the organisms; as witnessed by the chaos existing in the social fabric of Russia at the present time.

Albumins are combinations of four elements (C, H, O, N) in fairly constant proportions and of a dozen other elements in varying proportions. They form colloidal complexes, or particles, of which the constitution and intimate structure are unknown.

All that one does know at the present time on this point is, that living albuminous particles are complexes maintaining themselves at a certain constant state of physiochemical equilibrium by drawing from their surrounding medium the substances of which they are composed and which they assimilate, and by eliminating the useless waste from these transforming reactions and by utilizing other substances the transformations of which furnish the energy needed for the work so performed.

The Process of Nutrition

In the nutrition of intercellular particles, we distinguish in the organism three zones, or media, through which nutritive substances must pass.

These zones, or media, are separated from each other by dialyzing membranes which function by virtue of their density and by virtue of the differences of tonicity of the liquids on either side of the membrane, and especially by virtue of the chemical affinities between the components of the membrane and of these liquids.

The organism as a whole begins by making a choice of the substances needed for its nutrition from external objects. A second choice is made by the membranes of the digestive tract which allow to pass into the blood only certain selected substances which have been transformed into simple compounds. A third choice is made by the cell membranes which absorb certain substances and allow the remainder to be eliminated by the kidneys and the intestines.

In this way, the alimentary substances absorbed by the mouth undergo a series of successive fragmentations and selective passages through the membranes before they, in a crystalloid state, reach the intercellular particles, that is, the nutrition units.

A cell may allow certain colloids made up of small particles to penetrate into its interior. If these particles are homogeneous, have the same physiochemical equilibrium as those which compose the plasma of the cell, the cell may assimilate a certain number without undergoing appreciable change in its own general nutrition equilibrium. *But, in case of particles having different physiochemical equilibrium to those of the cell particle, the nutrition equilibrium of the invaded cell and of the new particle will be disturbed to a greater or less extent.*

Abnormal Nutrition

An albuminoid particle considered as a unit of specific function can no more assimilate entire particles, whether homogeneous or specifically different, than an airoplane, without first taking it apart, dividing it and appropriating piece for piece or reconstructing it according to the plans and specifications.

In order to fully comprehend the mechanism of the results which these reactions may have for the entire organism, we must keep in view:

1.—The work of disintegration or of digestion for each nutritive unit must take place outside of its interior. The particle, the cell and the entire organism expel from their interior, beyond their protecting membranes, the substances (antibodies) which represent the energy needed for the digestion or transformation of foreign substances (antigens).

2.—In differentiated organisms, each functional unit, while its reactions obey its own chemotaxis, must also conform to the chemotaxis of the whole, the particle is influenced by the chemotaxis of the cell, the cell by the chemotaxis of the organism, the organism by the surroundings and the society in which it lives, and so on.

In order to understand, in its entirety, the mechanism by which the animal organism can live normally, become ill and recover, we must take into account that the individual reactions of particles and of cells determined by specific chemotaxis are influenced by the reactions of the central nervous system which dominates the functions of all the units of the organism and can by itself disturb or readjust the nutritive equilibrium of these units.

It is always the central nervous system which in the last instance reestablishes normal equilibrium; or, more accurately, which establishes a new general equilibrium in the system which has been influenced more or less seriously by a heterogeneous substance, or antigen; and the influence of the central nervous system will be all the greater as it will have attained a higher degree of development.

The sum total of our knowledge compels us to the belief that the organism is absolutely incapable of assimilating colloid particles, which are specifically different from its own composition, without first breaking them up and digesting them. This results not from a defensive biological law but simply from its affinity for the physiochemical properties of its own structural and functional units.

Anaphylaxis

Starting with this assumption, the theory of immunity and of anaphylaxis can be formulated as follows:

1.—Every bacterium, every substance, that penetrates into the organism in a colloid state, either by way of the blood or the tissues, must be transformed into salts or crystalloids; that is, must undergo digestion in order to be assimilated or eliminated (antigens).

2.—Every organism, by its cells, glands or organs, normally produces a certain quantity of substance (or a series of substances) which carries on this digestion (antibodies).

3.—When an organism has once been compelled to perform this operation, it continues to produce a digestive substance in quantity greater than normal. It is then immunized and anaphylactized (phenomenon of "surcharge").

4.—All substances which the organism is obliged to digest in its interior are *Antigens.*

5.—Reactions between antigens and antibodies are specific but not always exclusively so.

6.—By reason of the antibodies being produced in excess, the organism will digest more easily and more rapidly antigens which are the cause of this excess, and the results will be

7.—A certain degree of anti-infectious or antitoxic immunity in those cases where the antigen is a germ which is pathogenic by its albumins or by its toxin.

We thus see that acquired anti-infectious immunity consists in the ability to digest a certain dose of infectious germs before these germs have had time to multiply so as to become pathogenic, and the organism acquires this property by producing a series of intracellular digestive ferments.

The first phase of this digestion, that is, the combination between the antigen and the antibody, occurs outside the cells in the fluids of the organism. If the quantity as well as the quality of the antigen is such as to form an abundant precipitate with the antibody, *the defensive act of the organism, the neutralization of the infectious agent, will be accompanied by a pathologic manifestation which constitutes the anaphylactic crisis.*

It is hardly probable that an albumin, even homologous, when injected into the blood or under the skin, can be assimilated without undergoing some sort of transformation, and the mild anaphylactic disturbances which are seen after the transfusion of 100 Cc. or 200 Cc. of whole blood (chills, excitement, dyspnea, peripheral pallor) seem to show that, in this case, there is no assimilation without previous transformation.

Antigens Cause Anaphylaxis: Anaphylaxis, the Beginning of Diseases

For the moment, it is important to recall, from what has preceded, that, if the nature of the reactions caused by antigens seems to be determined by the physiochemical properties of the colloidal state of these substances, the effects of these reactions on the organism will depend principally, if not exclusively, on the nature, the biologic properties and the quantity of antibodies normal or in excess.

From the biologic point of view, we may divide the reactions between antigens and antibodies into two great groups:

1.—Those which produce immunity alone—diphtheria, tetanus toxins, perhaps botulism and homologous albumins.

2.—Those which produce immunity and anaphylaxis or only anaphylaxis, all the other antigens, bacteria and heterologous albumins.

From the physiochemical point of view, it may be said that:

1.—Antigens which are exclusively immunizing form with their antibodies soluble compounds.

2.—Those which are immunizing and anaphylactic or exclusively anaphylactic form with their antibodies insoluble compounds.

In the first instance, the antibodies in excess dissolve the colloidal antigens; in the second, they precipitate. This difference in the nature of the resulting compounds is of the greatest importance from the biologic point of view as well as from the point of view of evolution of chronic diseases.

When antibodies form with their antigens soluble compounds, the appearance of antibodies in excess coincides with the cure. But, in all the other cases, when insoluble compounds are formed, the appearance of antibodies in excess always coincides with the beginning of disease or with the first appreciable pathologic symptoms.

To explain the nature, the mechanism and the basis of anaphylaxis, demands a knowledge of the nature of all the septicemic diseases and a general idea of all the researches concerning these disases.

To define a phenomenon, it is not sufficient to indicate the process by which it is produced. We ought to know of what it consists; in other words, its symptoms, the methods by which these symptoms are produced and particularly the properties of the elements which combine to produce them.

But, if we do not know all the properties of all the antigens and of all the antibodies as of all their compounds, we can know with certainty that *the anaphylactic state can be produced only by antigens which form with their antibodies insoluble compounds.* We have seen that there is no anaphylaxis for toxins which form with their antitoxins soluble compounds, and that there is always anaphylaxis for albumins, bacteria and their broth cultures which provoke the formation of precipitates.

The most convenient theory which could best explain the total of actually known facts would show that the anaphylactic crisis is a brisk reaction of coagulation caused by the union in the organism of a certain dose of antigen with a certain dose of antibody; no matter whether the antibody preexisted normally in the organism or whether it was formed as a result of special treatment. In the case of true antigens, these latter are coagulated or precipitated by the antibodies of the organism. In the case of non-antigenic substances, such as iodoform, antipyrin, peptones, etc., it is the injected substance which causes the coagulation of some substance of the organism. In either case, the nature of the reaction will be always the same, and, although the last case does not come within the limits of this study, it is not without interest to note it in order to avoid confusion and possible misunderstanding.

The effects of these coagulation reactions will be different according as the precipitate is formed exclusively in the blood or both, in the blood and in a certain number of cells, or even exclusively in the cells. If formed in the cells, the effects will depend upon the importance of the intracellular antibody in the life of the cell as well as the importance of the role of the cell in the life of the organism.

We have seen that only the antigens can give rise to the anaphylactic state in the organism. We have seen that all antigens are colloids, that only colloids are antigens.

About Colloids

We know that colloids are substances which do not crystallize and which, therefore, cannot be isolated from their medium in pure state, and we know that, in attempting to purify a colloid, we usually cause it to cease to be a colloid.

By continuing, however, through a series of successive disintegrations, we would find that every albumin which is a colloid is at last split to amino-acids which are crystalloids. We know that the molecules of a salt in solution coalesce one with another to form crystals when there is not enough solvent to keep them a certain distance apart, but we do not know how and why amines which can exist as free molecules, and which then obey the law of salt solutions, may congregate into such complex elements as colloids.

It would be especially interesting to know by what physical or chemical agent (electricity, magnetism, affinity) these molecules of amino-acids are bound and held together. We will know this certainly, some time. At the moment, we must confine our study to the biologic and physiochemical properties of the albumin as we find it in its complex medium and to the substances which result from its successive disintegrations.

Free amino-acids are no longer antigens. There is here a confirmation of the fact, which we have noted above, that only colloids can be antigens, and it is possible to conclude from this that foreign albumins taken as a food, which gastrointestinal digestion is incapable of splitting and *of transforming into amino-acids and which may pass into the interior of the organism as colloids, will provoke the formation of antibodies and in consequence the anaphylactic state.*

[*To be concluded.*]

Abdominal Emergencies

Diagnostic Difficulties in the Socalled Acute Abdomen

By B. B. PARKER, Allerton, Iowa

I WISH to call attention to some of those acute conditions which arise within the abdominal cavity, occur frequently in the experience of the general practitioner, and require skill, judgment and attention to detail in order that a safe and sane diagnosis may be reached and appropriate treatment prescribed.

Were I to ask what conditions come readily into your minds as being included in the "acute abdomen", it is probable that only five would be thought of and, in the order of their appearance, they would be: appendicitis, cholelithiasis, intestinal obstruction, perforating ulcers and ruptured tubal pregnancy. But, as we shall see, there are other conditions that must be kept in mind when diagnosing acute abdominal conditions.

It is one symptom in particular that brings the "acute abdomen" to the physician or the physician to the acute abdomen, and that is, pain.

The pain of acute abdominal conditions is usually sufficiently severe that the services of a physician are sought early, and it is this one thing in particular that enhances the value of a prompt diagnosis. In no other field, will prompt diagnosis and appropriate treatment be found quite so essential nor the reward in saving lives be so great. In almost all other locations, it is safe to treat symptomatically and study the case for hours or days, but not so in acute abdominal conditions.

Intra-abdominal lesions which cause pain are those which bring about either contractions, active spasm or excessive dilatation, any one of which produces pain by pulling on some part of the mesentery. It should be remembered that the pain may be referred, reflected or transferred and may be a considerable distance from the site of the lesion.

Concerning the Relief of Pain

It is, of course, the relief of pain that the patient most desires and, usually, he is in no mood to undergo an exhausting examination or extensive history taking. It is right here that we most often make a serious mistake and, yielding to the pressure of the patient or friends, administer an opiate with the idea in mind that, when the distress is relieved, we can investigate the cause of the illness. But, because the opiate is apt to lull both, the patient and the physician, into a false state of security, while the pathological condition is actually increasing in severity, it is best to first thoroughly investigate the cause of our patient's condition and determine whether surgical treatment is necessary or acceptable.

If surgical intervention is determined upon, a hypodermic of some opiate in sufficient dosage to secure relief should be given. If the diagnosis is in doubt or surgical treatment is rejected, then the opiate should be withheld and relief obtained by other measures, local or general, as best it can.

I will attempt to present some case histories from my files that will serve to bring out some of the difficulties in diagnosing intra-abdominal lesions.

Illustrative Case Histories

Case 1.—A man, 60 years of age, was seized with a severe attack of pain in the right upper quadrant. He gave a history of long-standing indigestion, but no attacks similar to the present. He was suffering intense pain which came on him suddenly, was sharp and lancinating, radiated toward the umbilicus, and had become more diffuse than at first. The abdomen was slightly rigid all over, but especially in the upper right quadrant, where the rigidity and tenderness prevented satisfactory examination. The pulse was rapid, respiration shallow and rapid, temperature subnormal and the patient bathed in a cold sweat. In all other respects examination was negative.

The first impression was, gall-stone colic. In favor of this, we had the sudden attack of severe pain in the gall-bladder region, its radiation toward the umbilicus, the rigidity being especially marked over the gall-bladder region and the long-standing history of indigestion.

Acute cholecystitis was considered but eliminated because of the sudden pain with neither chill nor fever. Chronic cholecystitis with perforation was thought possible. In favor of this was the long-standing history of indigestion followed by an attack of sudden pain which was becoming diffuse, and the rigidity and apparent shock present might indicate a spreading peritonitis.

Acute pancreatitis may come on suddenly and produce about all the symptoms present in this case, but it usually follows a history of gall-stone colic and is accompanied by nausea, vomiting and great prostration.

Appendicitis was eliminated by the fact that, even though the pain from an attack of appendicitis may be in the upper right quadrant, there is almost sure to be tenderness over McBurney's point, and some elevation of temperature will be present in the absence of the shock of perforation.

Renal colic and ureteral calculi were considered. The pain and tenderness were in the region of the right kidney and ureter, but the pain did not radiate toward the groin, leg or penis, and a catheterized specimen of urine showed no blood, albumin or pus.

Peritonitis was undoubtedly present and, because the pain and rigidity were spreading, it was evidently becoming generalized, but this fact did not determine the responsible pathological lesion.

Peptic ulcer, either gastric or duodenal, with or without perforation will cause attacks of severe abdominal pain similar to that confronting us in this case. In favor of peptic ulcer, was the long history of gastric disturbances, but against this argued the absence of any history of hematemesis or melena. The fact that the pain came on suddenly and was circumscribed at first, but was becoming more diffuse and accompanied by rigidity and distention, which also was becoming generalized, and the apparent severe degree of shock present led us to the belief that the proper diagnosis was perforation of a hollow viscus in the region of the pylorus.

An immediate laparotomy disclosed a perforated duodenal ulcer.

Case 2.—A man, aged 56, was taken ill about three hours after dinner. First, complained of severe pain in the right lower quadrant and, a short while later, vomited once. The pain was not relieved by vomiting. Previous history was negative.

Examination showed head and chest negative. Abdomen negative except in right lower quadrant, where muscular spasm and tenderness was elicited upon palpation, chiefly about McBurney's point. The patient was nauseated, pulse 90, temperature 100, and the bowels had not moved that day.

On a snap diagnosis, the patient was left with orders for confinement to bed, cold applications to affected area, and nothing but water to be given by mouth; and to report any variation in condition by or before the next morning. The following morning, he was reported as no better, still having pain in the side.

Examination at this time showed practically the same conditions as sixteen hours before, except that, with further examination, with the patient stripped, as he should have been the first time, a mass the size of a hen egg was found in the right inguinal region.

This mass was not tender, the patient did not complain of it and denied any knowledge of its presence. The mass could be moved over a restricted area, but could not be reduced into the abdomen. The right testicle was in normal location.

Careful questioning at this time elicited the information that, about three weeks previously, while pitching hay, the patient had experienced a sickening pain in the abdomen, but that it was transient and readily forgotten.

It now became a question of whether the first diagnosis was not in error and necessitated differentiating between appendicitis, strangulated hernia, hydrocele of the cord and lymphadenitis.

In favor of appendicitis, we had pain, tenderness, rigidity in the right lower quadrant with nausea, vomiting and fever. Against this diagnosis, we had the age of our patient without any previous history of appendicular trouble; and severe first attacks of appendicitis in patients of this age are exceptional.

Lymphadenitis would have shown signs of inflammation in or about the mass, and there would not have been rigidity of the right rectus, nor would the tenderness have been localized about McBurney's point.

Hydrocele of the cord could be readily eliminated by transillumination of the mass.

Strangulated hernia seemed the more plausible diagnosis and, in favor of this, was the irreducible mass, the continued nausea, although no vomiting occurred after the first time. Against this diagnosis, was the elevated temperature early and the rigidity and tenderness about McBurney's point. My surgical consultant agreed that the patient had a strangulated hernia.

Operation revealed a right, direct, inguinal hernial sac, containing a mass of omentum, a small knuckle of intestine and a large abscessed appendix.

The small intestine was only partially occluded, and this fact accounts for the absence of the usual signs of intestinal obstruction.

Case 3.—Mrs. W. S. B., 5-para, age 36, came in with negative history up to four or five months previously. Her labors had all been normal except for one forceps delivery. She had had no miscarriages. Her menstrual periods had always been regular and normal.

For the last five months, her menstrual periods had been slightly irregular and scanty, she had had some discomfort in the breasts, had noticed that her abdomen was enlarging and thought she might be pregnant, but had felt no movements.

Examination was negative down to the lower half of the abdomen. A rounded mass filled the pelvis and extended to within two fingers' breadth of the umbilicus. No fetal heart sounds or souffle could be heard.

Bimanual examination was unsatisfactory. The cervix could be felt lying closely posterior to the mass which seemed to practically fill the pelvis and was about of the consistency of a gravid uterus. The mass could not be separated from the cervix, and, because the cervix was high in the pelvis, the examining fingers could not make sure that the mass was or was not intimately connected with the cervix. But, no fundus could be felt unless the mass as described was in reality the fundus.

A tentative diagnosis of five-months' pregnancy was made and the patient instructed to return frequently for examination.

She reported at two weeks' intervals for the next three months and the only change was, a steady increase in size of the mass and slight cervical softening. She thought, she had felt movement and had not menstruated after the first examination. About the end of the third month, she was seized with crampy pains in the lower part of her abdomen, apparently in the tumor mass. These pains appeared to her to be labor pains. They recurred at regular intervals, increasing in frequency and severity, and were accompanied with desire to micturate and defecate. The patient desired to make traction and would bear down with them.

Examination now showed a cervix held high in the pelvis, and no dilatation. The pains continued at from three to five minutes' intervals throughout the night, but examination failed to reveal fetal parts or heart tones. A surgical consultant felt that the diagnosis lay between uncomplicated pregnancy, cystic tumor and extrauterine pregnancy. In favor of uncomplicated pregnancy, we had the history of about eight or nine months' duration, irregular menstruation for five months and no menstruation for three months, a tumor mass steadily increasing in size until, at this time, it extended to a point half way between the umbilicus and ensiform cartilage. We had a multipara who, having had previous experience, believed herself to be pregnant, although she did not have some of the usual accompaniments of that condition.

Against this, we had the absence of or inability to hear fetal heart sounds or to map out fetal parts. Also, a twelve-hour test of pains made no impression upon the cervix.

Cystic tumor was indicated by the presence of a mass which increased in size, originating in the pelvis and which did not give evidence of fetal heart tones or fetal parts. Against this was the fact that the patient had menstruated irregularly for five months and had

not menstruated at all for three months. She had apparently gone into labor, had intermittent pains which became more frequent and severe and assumed a bearing-down nature.

An ovarian tumor with twisted pedicle might account for the patient's condition if we leave out of consideration the several hours of intermittent pains. The sudden onset of pain in a tumor mass, that had been present for several months and had been increasing in size, would lead us to suspect an ovarian tumor.

Extrauterine pregnancy remained to be considered. If this case were one of extrauterine pregnancy, it would have to be classified as abdominal, for no case of extrauterine pregnancy could be confined to the tube and reach the size of this mass.

It should have been easy to outline fetal parts and, with a living child, fetal heart tones should have been heard. There was no history of pain or shock at any previous time, indicating that no rupture of the tube had taken place. This mass was well defined and too large when first discovered to be due to extrauterine pregnancy, with no history of pain or shock previously. However, on account of the irregular menstrual history and the unsatisfactory bimanual examination, my consultant advised laparotomy on a tentative diagnosis of extrauterine pregnancy. A large ovarian cyst with twisted pedicle and a normal gravid uterus at the third month, which was pushed upward and backward from an elongated cervix, was found. A dense portion of the cystic sac was jammed down in the anterior cul-de-sac, and it was this that misled us when making vaginal examination. I now believe that an examination under ether and with a tenaculum attached to the cervix, or the x-ray would have cleared up this diagnosis.

Case 4.—A man, 38 years old, was seized suddenly after breakfast with severe pain in the upper left quadrant. The bowels moved once; apparently normal. The pain increased, became sharp and agonizing at intervals. He was given ½ ounce of magnesium sulphate which he immediately vomited, together with his breakfast. He was given ½ grain of morphine hypodermically and, the pain not having been relieved, another ¼ grain was given in thirty minutes, also a second dose of magnesium sulphate which, like the first, was vomited promptly. The sharp pains were relieved by the opiate, but his general discomfort remained. Three large saline enemas were given and retained.

Examination at six P. M., approximately twelve hours after onset, showed a well developed man lying in bed with knees drawn up, a painful expression on his face, one hand shielding the left side of the abdomen. General examination negative, pulse 86, temperature 99.6, abdomen slightly rigid and tympanitic all over. Palpation elicited no tenderness or tumor. No flatus or feces had passed since a few minutes after onset. Rectal examination negative. At first, the patient had a frequent desire to micturate, and the pain tended to radiate toward the left inguinal region. No bloody urine had passed. There was a history of slight attacks of colicky pains in the right lower quadrant; also, the patient remembered sneezing hard just prior to the onset of this pain.

It is possible that this patient's condition was due to at least one of four lesions. Intestinal obstruction; appendicitis with referred pain; ureteral calculus and peritonitis.

In favor of intestinal obstruction, was the sudden onset of pain in the upper left quadrant, following a straining effort, the vomiting of food and cathartic, the distention and tympanic condition of the abdomen and the retention of the enemata.

Against obstruction, was the immediate severity of the pain, its radiation toward the inguinal region and absence of fecal vomiting. But, as a rule, obstruction low down in the intestinal canal is not followed by fecal vomiting until later. The history of previous attacks of pain in the right lower quadrant caused us to consider appendicitis. Against appendicitis, we had early obstipation, distention and tympany, slow pulse, very slight elevation of temperature and no tenderness over McBurney's point. Ureteral calculus causes pain of the character and severity experienced here, but it does not cause obstipation, distention or tympany. Peritonitis was ruled out by the slow pulse and low temperature.

It was thought that the diagnosis was either ureteral calculus or intestinal obstruction.

A large soft-rubber colon tube was introduced and one-half gallon of water containing four ounces of glycerine injected. This solution was retained and could not be syphoned off.

Luckily, I had taken with me a flexible metal colon tube which I have had in my possession for several years, although I had never been favorably impressed with its usefulness. I determined to try this and, upon introducing it into the rectum, I encountered an obstruction about five inches above the anus. The tube would pass easily thus far, then met a soft

resisting mass of some kind. After several attempts and failures to get past the obstruction, the tube was introduced as far as possible, held firmly against the mass and an enema allowed to flow in. The combined action of the tube and the hydrostatic pressure seemed to accomplish the desired result for, suddenly, the resistance disappeared and the colon tube slipped easily up the colon for several inches. After waiting a few minutes the patient was allowed to sit up on the slop jar, and the result in gas, fluid and feces proved that the obstruction had been overcome.

I am convinced that this case was one of volvulus due to the force of the act of sneezing; also, that the twist occurred in such a manner that fluids were admitted, but a valve-action prohibited their ejection. I am also convinced that, without the metal rectal tube, this case would have demanded operation.

Conclusions

In the light of my limited experience, I am convinced that the following points should be remembered in all acute abdominal conditions:

1.—It pays to take nothing for granted. Give due weight to the patient's history, but not sufficient to overrule your better judgment.

2.—Always strip your patient and examine from head to foot.

3.—Do not administer opiates or cathartics in acute abdominal cases until you are sure that you are not dealing with intestinal obstruction, appendicitis, peritonitis or perforation of a hollow viscus.

4.—Repeated gastric lavage will relieve the vomiting and pain due to peristaltic action.

5.—Early consultation is advisable in all acute abdominal cases.

6.—It is always best to prohibit food by mouth, and this applies with equal force to milk and other liquids.

7.—Large enemas or colonic flushing are almost as sure to produce excessive peristalsis as food or cathartics.

8.—Too vigorous examination is many times responsible for an increase in the severity of the lesion.

9.—It is better to do nothing than to kill your patient by too active treatment.

10.—Don't trust to luck. Be sure. Use your head.

This paper was read before the Wayne County (Iowa) Medical Society at its January, 1924, meeting.

My Twenty Favorite Drugs

Purgatives and Laxatives

By WM. RITTENHOUSE, M.D., Chicago

VII. Phenolphthalein; VIII. Aloin; IX. Belladonna; X. Strychnine; XI. Ipecac; XII. Cascara Sagrada; XIII. Sodium Phosphate.

EDITORIAL COMMENT:—This is the last manuscript that Doctor Rittenhouse prepared for publication in CLINICAL MEDICINE. *He sent it in early last month and was greatly distressed not to be able to contribute his customary installment of "The General Practitioner".*

I HAVE had a number of inquiries as to when this series, descriptive of my favorites in therapeutics, would be resumed and why it has been held up so long. The cause of the delay on my part has been illness. I hope to be able now to carry it on until completed.

To the family physician, the question of purgatives and laxatives is an important one. Not only does he frequently meet patients who appeal to him to be cured of constipation, but in many diseases the clearing out of the bowels is one of the first and most important things to be attended to. The matter is complicated by the fact that different individuals react in a very different manner to certain drugs, so that each patient becomes to a certain degree a separate object of study. The attempt to make each patient use the same laxative or purgative results in much discomfort to the patient, if nothing worse, and sometimes causes disappointment in preparing for an operation.

In the past, much dependence was placed upon the old trinity, calomel, epsom salts, and castor oil. The Reverend Jasper of a generation ago used to go about lecturing, and the burden of his theme was, "De sun do move!" I am inclined to put emphasis upon the fact that the world, the world of medicine, "do move." I believe that medicine moves forward whenever it substitutes a palatable remedy for a nauseous one, or a safe remedy for a risky one, or a gentle remedy for a drastic one; always provided, of course, that there is no loss of efficiency. For this reason, I have practically abandoned the use of the three substances mentioned, except calomel in small doses—too small to salivate. I remem-

ber my mother gratefully for the fact that she never made us take castor oil. Some of my playmates were dosed with it by their parents, but I cannot remember that they had any better health than we had, even though they had to take the "spring blood purifier."

But, for a long time to come, castor oil and epsom salts will continue to be used as domestic remedies by the laity, both on their own initiative and by the doctor's orders.

The Persuasive Taste

There are still quite a few people, especially among foreigners, who estimate the effectiveness of a remedy by its disagreeable taste. When I was practicing among the foreign element, many years ago, I learned this lesson. Quite often, when I had put up a prescription in an agreeable vehicle, the patient would bring it back and say, "That's no good. Not strong enough. I could drink whole bottle." After learning this lesson that they wanted their dose to look black and taste strong, I took care to give them what they wanted, by adding caramel to color it and not using much syrup or flavoring. They soon had more faith in me.

I am well aware that many doctors, for whose ability I have every respect, are in the habit of prescribing constantly the three drugs named; and they get good results. But, I must express the truth as I see it and I do not expect every one to agree with me.

My patients are grateful for the consideration I try to show them. Only a few days ago, a lady said to me, "I like Dr. B., but he does prescribe such disagreeable doses, that I simply cannot take them, and my children rebel against his medicines for the same reason. Intelligent people are becoming educated to the idea that modern pharmacy has done much to make drugs more palatable. Coated pills and tablets cover the nauseous taste of most drugs, and those which cannot be put in tablet form can usually be disguised in elixir, or perhaps a more agreeable substitute can be found. The foothold gained by homeopathy was certainly due in part to the palatability of the little sugar granules.

My objection to calomel in large doses rests upon some very ugly cases of salivation that came under my notice in my early practice—not of my doing, I am happy to say. I vowed then that I would never salivate a patient. To ruin a fine mouthful of teeth, is no trifling matter and one that a patient will not readily forgive. And I do not blame him.

I use calomel in small doses, but never enough to salivate.

Epsom salts and castor oil I reject because of their exceeding nauseousness, and because their action is unsatisfactory with many.

The Best Laxatives

I regard phenolphthalein as our best laxative—most agreeable and most efficient. For more than a dozen years, I have depended largely upon it, either alone or in combination. With the majority of patients, 1 grain is sufficient as a laxative, and 3 grains as a brisk purgative. It has very little taste and operates with little or no griping. Many patients report that they are not distressed if they cannot go to the toilet at once on feeling the call. Another good feature of it is, that it has no constipating reaction.

It is unfortunate that a certain manufacturing firm encouraged self-medication among the laity by putting out a tablet of a peculiar shape and with a proprietary name. It must be admitted that some of the blame rests upon doctors who prescribed it under this name. The said firm atoned somewhat for their action by issuing a tablet of ordinary form for the use of the medical profession—after the mischief had been done.

In treating the constipation habit with phenolphthalein, I have obtained the best curative results by combining one grain of it with the well known formula of aloin, belladonna, strychnine and ipecac (¼ gr. aloin). With a few persons, it may be necessary to double this dose at first. I have found it best to give the laxative twice a week or every three days. If any laxative is given too frequently, the bowel acquires a tolerance for the remedy and the constipation is not cured; whereas, if given every three or four days, the bowel gradually acquires the habit of action.

Aloin is valuable in chronic constipation, and the addition of extract of belladonna prevents griping; strychnine promotes peristalsis in the sluggish bowel; and ipecac, by promoting intestinal secretion, relieves the dryness of the mucosa.

Cascara works well with some persons. It is nauseous and should be given in coated pill or tablet, or in some aromatic elixir as a vehicle.

In certain forms of acid stomach and sluggish liver, I get good results by ordering ½ teaspoonful of sodium phosphate in a teacup of hot water before breakfast, repeated for a number of days.

This constitutes my list of favorite laxatives, and it is very seldom that I need to go outside of them.

The Use of Squill in Internal Medicine

By EDWARD AHLSWEDE, M. D., Buffalo, and
WERNER BUSCH, M. D., Hamburg

IT is entirely without justification that a remedy has disappeared from medical practice which hitherto, as far back as Hippocrates, had been generally employed and appreciated. This remedy is Bulbus Scillæ. Only in recent years has it again been introduced into medical practice, more especially in cases of cardiac insufficiency. The action of squill apparently is very similar to that of digitalis. According to Mendel, the idea that the effect of squill is exerted mainly as an increase of the diastolic activity of the heart (which itself is still problematical) is not improbable although it has not been definitely proved. Numerous clinical investigations suggest that the remedy acts mainly upon the heart muscle. But, it has also been observed that disturbances in the stimulus conductivity occurred, as well as slowing of the pulse.

The pharmacological active constituents of squill and their effects upon the separate portions of the heart have been made the subject of publications by Markwalder and Massini. The results of these two investigators justify the conclusion that, in all probability, the neglect of this remedy has been a great error and that, in numerous instances, the administration of squill gave results after all other cardiacs had been ineffective.

Certain observations agree in that squill should not be employed in coronary sclerosis because, here, undoubted aggravation has been observed. Contrariwise, the effect upon the weakened heart muscle is so decidedly good that, in these cases, the administration of squill may be urgently recommended.

Disturbances in conductivity are less frequently observed after the use of squill than after digitalis. The slowing of the pulse, however, is less frequent than with digitalis. Still, we have noted cases in which the pulse was indubitably slowed and, in this remedy as in others, attention must be paid to the differences in the reaction on the part of different individual patients.

Massini advanced an interesting hypothesis to the effect that the action of scilla maritima is analogous to that of digitalis. The investigations of Loewi have shown that digitalis sensitizes the heart muscle for calcium. Massini's findings render it probable that an analogous sensitization for potassium might be produced by the administration of squill.

Of great importance appears to be the good effect of squill upon the elimination through the kidneys which occurs apparently independently of the simultaneous improvement in the heart action. Regarding this point, reports from Massini are available. Originally, squill was considered as a diuretic and, in the United States and in England, it still is a constituent of numerous drug combinations. Markwalder has studied the various commercial preparations of squill and the methods of administration comparatively and came to the result that "the measured commercial extracts do not merit the designation of extract in so far as they are less effective than the initial material." The same holds true for the various tinctures of squill.

The investigations of Ewin and Markwalder show that, very probably, the active glucoside of the squill root would exert more intensive effects if it could be obtained pure. Markwalder declares it to be probable that the effect upon the kidneys and possibly upon the circulation is the essential part of the scilla action.

Recently, it has become possible to produce a preparation of squill ("Scillaren") which may be injected intravenously and subcutaneously and which contains similar frog-units as the pulverized crude drug, according to several independent experiments.

Mendel has claimed that the simultaneous administration of squill and foxglove, or their administration in combination, was contraindicated. This view is contradicted by the fact that aggravation of symptoms has not been observed when both remedies were given in combination—excepting cases of coronary sclerosis in which the use of squill causes the condition to become worse.

For the present, the administration of this remedy may be limited to those cases in which there is a more or less considerable weakening of the heart muscle associated with edema and disturbances of renal secretion. It is interesting and important that Massini reported a case of contracted kidney which was influenced very favorably by squill; because, in this affection, large doses of digitalis must be avoided.

If further observations of this nature were to be made, it would constitute an important progress.

There is a combination of squill (containing

the active glucoside in quantities measurable by the frog experiment) with cardiacs that are effective through the intestine, for instance with camphor. Such a combination represents two remedies which increase each the other's effect, which influence especially the heart muscle and of which one, furthermore, exerts valuable diuretic and vascular action.

A further possibility, which is of great value for the administration of squill, is found in the cases of cardiac insufficiency which react to continued doses of digitalis with symptoms of cumulation and which necessitate a change of medication. In such cases, it was hitherto necessary to fall back upon strophanthus and camphor with caffeine, without, however, securing the favorable action upon the heart muscle that is procured from digitalis. Here, then, scilla maritima seems to be a remedy that fills a real want and that, in careful dosage, may produce life-saving results.

Bibliography

1.—Massini: Scillaren in der Behandlung der Herzkranken. *Schweiz. Med. Woch.*, 1922, Nr. 26.
2.—Markwalder: Wirkungswert von Bulbus Scillae. *Klin. Woch.*, 1922, Nr. 5.
3.—Mendel: *Ther. der Gegenw.*, 1918.
4.—Ewins: *Jour. Pharm. & Exper. Therap.*, 1912, Vol. III.
5.—Houghton: *Jour. A. M. A.*, 1898.
6.—Frey: *Münch. Med. Woch.*, 1921, s. 931.
7.—Kraus: *Klin. Woch.*, 1922, Nr. 9, s. 444.
8.—Goldschneider: *Deut. Med. Woch.*, 1922, Nr. 2
9.—Cloetta: *Arch. Exper. Pathol. & Pharm.*, 1920.

Concussion and Infra-red Rays

In the Treatment of Catarrhal Deafness

By PHILIP RICE, M.D., F.A.C.S., New York

IT is quite natural that the splendid advances made in medicine and surgery during the past two decades should have stimulated renewed effort to find something which would bring aid and comfort to the deafened. This large and ever growing class of patients has been compelled to wait longer than others before the medical profession was able to say definitely that deafness was by no means a hopeless condition. This delay has been as disappointing to the otologist as it has been to the patients. He has been as eager to restore hearing as patients have been to have it done.

For years, it has been realized that our hope lay in electricity. But, dealing with one of the most delicate, if not the most delicate of organs, the first steps, which are necessarily the cruder steps in every experimental process, have had to be taken by others. Certain electrical principles had to be elucidated and put on a sound basis and safe and practical methods for their application had to be devised before the otologist dared to resort to them. Happily, this stage is past. Electricity can now be applied to the ear as comfortably, as safely and with as much assurance of success as it can to any other part of the body.

Diathermy and Infra-red Rays

The two kinds of current which meet the requirements for ear treatments are Diathermia and the Infra-red Rays. The effect produced by these is quite identical. Both penetrate the deeper tissue and, by cell agitation and stimulation, increase the circulation, cause absorption of waste deposits, improve nutrition and thus improve function. The infra-red rays treatment is preferable, since the apparatus for their application is exceedingly simple, requiring less technical skill for their successful application, and the apparatus is inexpensive. Diathermia, on the other hand, requires a larger and more expensive apparatus and no little skill to apply.

The infra-red rays are those long wavelengths, deeply penetrating rays of radiant energy which occupy an extensive section of the light-spectrum. They have little thermal, that is, heat effect on the skin. The full force of the instrument creates no more than a mild sensation of warmth. Yet, the fact has been demonstrated with the clinical thermometer that, when placed at a distance where no sensation of heat was felt on the skin, the temperature in the mouth was raised. Moreover, though applied for an hour or longer, no labyrinth irritation results.

Vibration by Concussion

However, in addition to the ray treatment, a specific form of vibration must be used to obtain the best results. It must be remembered that every chronic inflammatory process is accompanied by the formation of new connective tissue. This means the formation of adhesions which in turn cause anchylosis of the parts. Normal suppleness of the ossicular chain is interfered with and, with the progress of the disease, is lost altogether. These adhesions must be broken up before improvement in the hearing is possible. Neither diathermia nor the rays alone will be able to do this. Various forms of vibration have been devised, the most-generally used being suction and pressure, or socalled pneumomassage. Though the most extensively used, it is of

all the most harmful. The pressure and suction (pushing and pulling), applied to parts that are already more or less devitalized because of deficient nutrition, will sooner or later result in relaxation of the drum-membrane and aggravation of the deafness. The vitality of the tissues in the middle ear in all chronic catarrhal deafness is below normal. Hence, to subject them to such unnatural treatment, is reprehensible.

There is but one form of massage that is truly physiological, namely, mild pulsations of air, or, in other words, mild concussion. The impact on the drum-head is nothing else than an exaggerated sound wave, hence is truly physiological. Because of the rigidity of the conductive apparatus, it must naturally be greatly exaggerated; but it must not be different in quality. When applied after the parts have been warmed and softened with the infra-red rays, a greater effect is produced. The heightened color of the drum-membrane shows that the blood supply has been increased; which means increased nutrition.

The highly satisfactory results from this method of treatment are well illustrated in the following cases.

Some Case Reports

In March, 1923, Mrs. B. was referred by a Boston aurist. A letter received from him a few days before her visit stated that the father of the lady was almost totally deaf, that the condition was one of sclerosis, that he had treated her at various times during the past eight years, with gradually less satisfactory results, that in his opinion she would end in the condition her father was in. Examination showed reaction to the tuning forks about one-third of normal in the right ear and about one-half of normal in the left. Hearing for the watch, scarcely one-fourth of normal in the right and about one-half in the left. Hearing for the voice, if only one person spoke to her and spoke distinctly, was apparently quite normal. However, if several persons were talking, sounds became confused and she heard little or nothing. Twelve treatments brought her reaction for the various tuning forks up to normal, hearing for the watch in the right ear to 42 inches and in the left to 60 inches, which is normal with the watch used. Three months later, during which time she had no treatments, the hearing for the watch was 60 inches in the right and 72 inches in the left. For the voice, her hearing seemed to be absolutely normal under all conditions.

On October 7, 1922, Miss T. called and gave the following history: Acute earache in the left ear, ten years before. One year later, noticed that the hearing in that ear was somewhat dull. This gradually increased, though she had had treatments at various times. Several members of her family are deafened. The hearing for the watch was 12 inches; for the whisper, 6 feet; and for the voice, 12 feet. With the low tuning fork, bone conduction was 10 seconds longer than air conduction (the normal with the forks used is 20 seconds longer by air than by bone), while for the high fork it was approximately normal. Fifteen treatments brought the hearing up to 30 inches for the watch, 25 feet for the whisper and normal for the voice. This condition remains the same after a year.

October 25, 1923. Following an injury to her head, a number of years ago, Mrs. P. lost her sight for some weeks. Gradually this was regained. But, soon thereafter, the hearing gradually began to fade. Reaction for the low tuning fork was practically normal in both ears, but the high forks were heard only faintly. The watch was heard at 2 inches in the right and 6 inches in the left. The whisper was heard at 6 feet in the right and 8 feet in the left, and the voice about 12 feet in both. Being able to remain in the city only a week, she took daily treatments. At the end of the week, she heard the watch at 18 inches in the right and 22 inches in the left; the whisper 22 feet in both. The tuning fork test showed normal for both air and bone conduction with the low fork, while the high was heard 23 seconds in the right and 20 in the left. She promised to return for further treatment, should there be any signs of decrease in the hearing. As she has not done so during the year and a half, we assume that what she had at the last visit has been retained.

June 1, 1923, Miss E. reports that, following an overdose of quinine, eight years before, hearing was almost totally lost for a time. This was accompanied with violent noises. In time, the hearing improved somewhat and the noises lessened, even ceasing altogether in the left ear at times. In the right ear, they never ceased. Hearing for the watch was 20 inches in both ears and for the whisper 15 feet. Hearing for the distinctly spoken voice was apparently normal. Only when a number of voices were heard together, was there difficulty in hearing. Table conversation was quite impossible. Infrequent treatments during June, July, and August have brought the hearing for the watch up to 30 inches in both

ears and for the whisper up to 24 feet, and the noises have disappeared altogether.

May 1, 1923. Mr. D., the son of a deaf father and a deaf mother, gives a history of chronic head-colds for many years with gradual loss of hearing. The various tuning forks showed practically normal. The hearing for the watch, 6 inches in both ears and for the whisper about 15 feet. Twelve treatments brought the hearing for the watch up to 48 inches in both ears and for the whisper up to 25 feet in both.

July 7, 1923. Mr. D., age 70, for many years a victim of chronic catarrh of the upper respiratory tract, three years ago found the hearing in the left ear greatly reduced. During the past year, the right has shown signs of also becoming dull. Constant roaring noises in both ears. The hearing for the watch in the right is 12 inches and for the whisper 12 feet. In the left, the watch is heard only on firm contact, and the whisper at 4 feet. One month later, having had twelve treatments, the watch was heard 50 inches in the right ear and 25 inches in the left. Noises have entirely ceased.

This list could be extended almost indefinitely. Removing the general cause, that is, the underlying condition, and reestablishing a normal circulation and nutrition in the middle ear and surrounding area by physiological measures, constitutes the ideal treatment. When this can be achieved in any case, the function of hearing must of necessity be increased.

103 East 54th Street.

Tinnitus Aurium

A Symptom Encountered in Many Diseases

By F. R. MORGAN, M.D., Quincy, Illinois

ONE of the most common symptoms that are complained of by a patient to an otolaryngologist, is that of noises in the head or ear (*tinnitus aurium*), and it is one of the most difficult symptoms to cure. Not only does the patient go to the specialist for relief, but to the general practitioner also, and rightly so. These noises are not a disease, but a symptom of a pathological condition which may be located anywhere between the top of the head and pelvis.

It is my desire, in writing this paper, to show that the specialist and the general practitioner should work in close conjunction in the treatment of this condition, and that they should endeavor to find and treat the cause instead of the effect.

A great many of these patients will not only complain of noises in the ears or head, such as popping sounds, church bells, hissing of steam, whistling, chirping, or like the noise of a distant railroad train, but also of nausea and vertigo. These noises are either intermittent or continuous and are always worse when the patient is lying down, or at times when his mind is not engrossed with other matters.

I will first take up other diseases, besides those which are located in the head, such as those a general practitioner should treat, and then gradually pass on to the ones that the specialist should treat, or both together; so that it can readily be seen, where both the specialist and general practitioner should work together on the case in order to determine the cause and to afford relief.

Where Observed

Tinnitus aurium is sometimes found in diseases of the heart with insufficient compensation. In these cases, there is a tendency to congestion of the mucous membranes and tissues of the head, causing a hemorrhage in the labyrinth, thus producing our symptom of tinnitus.

We also have these hemorrhages into the labyrinth sometimes occurring in patients having high blood pressure; also in arteriosclerosis, causing nausea, headache and vertigo in addition. If this appears in a person having considerable deafness, there is a tendency of making a wrong diagnosis of labyrinth disease. In all of these cases, having these four cardinal symptoms, the diagnosis will be greatly facilitated if the conditions of the arteries be noted and the blood pressure taken.

In anemia of any form, we are liable to have hemorrhages in the labyrinth, thus producing the symptoms of noises in the ears.

In leukemia, we often have a hemorrhage in the labyrinth, accompanied with deafness as well as tinnitus aurium. Vidal and Isambert report deafness and tinnitus in ten percent of all cases of leukemia. Schwabach claims that, in acute leukemia, deafness appears early in the disease, while, in the chronic form, deafness does not appear until late.

According to Politzer, tabes dorsalis is ac-

companied by unbearable tinnitus, the disease being bilateral and accompanied by vertigo.

In chronic interstitial nephritis, tinnitus, vertigo and deafness may be observed, and also in parenchymatous nephritis, although to a lesser degree.

In neurasthenia, the most frequent oral disturbance is tinnitus. This symptom is variable, changing from time to time, and is always worse during fatigue and during attacks of anger or of other emotions. The patient is always better in the morning after a complete rest, but the symptoms return during the day with marked depression.

In syphilis affecting the internal ear, there is a loss of hearing by bone conduction and for high tones. Nystagmus, which is spontaneous, is also present. The infection is nearly always bilateral. There will be tinnitus, deafness, dizziness and a staggering gait. The dizziness and staggering gait usually disappear after a few days or weeks, but the deafness is likely to be complete and permanent.

In Ménières disease, there is a sudden and complete loss of hearing with tinnitus, nausea, vomiting, nystagmus and vertigo, even without a previous history of ear trouble. It is supposed to be due to a hemorrhage within the labyrinth.

In chronic catarrhal otitis media, there may be any kind of a noise, but mostly of a ringing or hissing nature. Although the patient is somewhat deaf in that ear, he will probably only complain of the noises, and will be surprised, when, after the usual hearing tests, he is told of the deafness. The tinnitus is usually worse when lying down at night, and will probably not be present at all during the day time. It may disappear entirely for months and then return again. It will probably disappear entirely during the last stages of the disease. Involvement of the labyrinth may increase or decrease tinnitus, according as the nerve fibers are simply irritated or destroyed.

Tinnitus may also be one of the prominent symptoms of the following diseases:

Acute, diffuse, suppurative, manifest labyrinthitis; Adhesive processes of the middle ear; Concussion of the labyrinth; Disease of the cochlea; Hyperostosis of the bony capsule of the labyrinth, and otosclerosis. Indirectly it may occur with nasal obstruction and catarrhal infections of the throat and upper pharynx.

In cases of impacted teeth in the upper jaw, also in cases where teeth are worn short enough to cause a protrusion forward of the lower jaw, there are likely to be roaring sounds in one or both ears.

It is not my intention, in writing this paper, to go into the pathology, diagnosis and treatment of the diseases in which tinnitus is such a prevalent symptom, but to call the attention of both, the general practitioner and the specialist, to the diseases in which this most annoying symptom is prevalent, in the hopes that they will see that neither one can diagnose the causes of this symptom successfully without the help of the other. Neither can they treat tinnitus aurium with any success at all, unless they treat the cause.

The Diseases of the Eye In Relation to General Systemic Lesions

Strabismus

By BEULAH CUSHMAN, B. S., M. D., Chicago, Illinois

SQUINT, or strabismus, as Fuchs states, is that condition in which one eye fixes at a time, the other deviating even when both eyes are open.

The types of deviation are those of the paralytic and non-paralytic, or comitant. The comitant deviations may be periodic or alternating. Paralytic deviations are due to nerve lesions, which may affect one or all the muscles of the eye, intrinsic and extrinsic.

Squint usually develops in eyes that are highly hyperopic or myopic (far-sighted or near-sighted) but it also develops frequently in an eye which has become blind from disease or injury.

Comitant squint is the usual form which comes on as the child begins to use the eyes for prolonged fixation in near play and work, usually at about 3 years of age, but it may develop at any time, from a few months to 13 or 14 years of age. Comitant squint is usually convergent and may measure only a few degrees to 45 or 50°. Alternating squint is that form in which either eye may fix, and the other eye deviates the same number of degrees. Periodic squint is that form which is

present only part of the time. It usually appears with fatigue, as at the end of the day, or when the patient is not well, and often precedes the other forms.

Squints, not paralytic, frequently develop following any illness during the first years of life, as whooping cough, measles or scarlet fever and is probably not due to the disease at all but to the general debility. The strain of fixing the eye becomes too great, and the weaker eye squints.

Divergent squint is not uncommon but occurs much less frequently than convergent squint. The divergent squint develops later in life in the average case, and the divergence tends to increase with age.

The vision in squinting eyes may be equal for each eye separately, but as a rule is lower in the squinting eye or proportionately so, according to the number of years the eye has been squinting. The refractive error of the eyes, in the beginning, frequently measures about the same, but the eye that squints will become a blind eye from disuse. Binocular vision is necessary to develop binocular fusion, which gives us stereoscopic, or depth, vision.

Binocular fusion is seldom developed after the third or fourth year, although binocular vision may be, and it is binocular fusion that early treatment of the squint cases may develop. Stereoscopic vision is developed with one eye through training; but, if one eye becomes blind late in life, it is difficult for the individual to learn to measure depth.

The symptoms of comitant squint, aside from the appearances, may be negative, although the eyestrain and accompaniments are frequently present. But, in paralytic squint, diplopia is the most frequent complaint and the most annoying.

Diplopia is complained of occasionally in comitant squint and not infrequently after operative interference of convergent-squint cases.

The early treatment of all squint cases is paramount to avoid the development of a blind, or amblyopic eye and to give binocular fusion as well as binocular vision. The refractive error must be carefully measured with the pupils dilated with atropine and the full correction should be ordered. In the usual convergent-squint cases, if the proper glasses are given within the first few months, the eyes will be straight with the glasses on and binocular fusion will be developed. It is important to put glasses on as soon as the squint develops, even though the child be only a year old or less. (Special frames are made for these children, and they wear them very comfortably.)

For all neglected cases, or those which have gone a number of years without glasses; the refractive error should be measured and tried out, and many times the glasses will straighten the eyes while wearing them, but the trouble returns as soon as they are taken off. Usually, binocular fusion is not developed in these cases, and the vision in the squinting eye may not be improved perceptibly, although straightened with the glasses.

Glasses do not correct the divergent-squint cases as uniformly as the convergent cases, although the glasses are put on early. The far-sighted, or hyperopic, divergent-squint cases respond very unsatisfactorily to glasses, while the near-sighted, or myopes, which make up the large percentage, respond more satisfactorily to glasses. In progressive myopia, the divergence usually comes on late and persists.

Operative interference is required many times, but each case requires individual study, and, as a general rule, operative procedures are not indicated until the patient is about ten to thirteen years of age or after puberty, as many eyes will straighten if left alone, and, if there is no vision to be gained, operative procedures are not indicated. Operative interference in many cases is undertaken for the sake of the cosmetic results.

The treatment of the paralytic cases depends on the muscle or muscles involved, and the cause. The paralysis occurring after diphtheria and some of the other acute infections may clear up spontaneously in 6 to 12 weeks; after infantile paralysis, it clears up rapidly if it does clear up at all; if not, it becomes permanent and operative work becomes necessary.

Paralysis after injuries must be taken care of according to the muscles involved and to the individual case. One of the most common causes of squint in adults is a sixth-nerve paralysis; it is a pathognomonic symptom of lues and must be proved otherwise. Specific treatment instituted early in these cases corrects the divergence as well as the diplopia usually in a very short time.

The treatment in a blind eye is operative, although it is not satisfactory as a rule. The patients must realize that watchful care must follow them for many years, and that glasses are necessary before and after operations.

Dental Infections, Oral and Systemic

And the Degenerative Diseases

By WESTON A. PRICE, D. D. S., M. S., F. A. C. D., Cleveland, Ohio

EDITORIAL COMMENT.—In the following, we reproduce the author's own outline of the arguments, investigations and results that he has laid down in his remarkable work on "Dental Infections," which is announced in the review department of this issue of CLINICAL MEDICINE.

THE first of these, Volume I, "Dental Infections, Oral and Systemic", is a critical analysis of the generally accepted fundamentals for diagnosis, prognosis, and treatment of dental infections in their relation to systemic involvements. Volume II, "Dental Infections and the Degenerative Diseases", is a presentation of the practical application in clinical practice of the new interpretations developed in Volume I, and is an index and atlas of lesions frequently found associated.

These books are not primarily research reports but are designed as reference books for the busy dentists and physicians to aid them, if possible, in diagnosis, prognosis, and treatment, and to suggest a new approach to the dental infection problems. I have therefore not included details of the researches, such as how controls were run or laboratory conditions maintained, both because the additional space required would embarrass by increasing the size of the books and because that detail, of interest only to research workers, would confuse and discourage the clinical group for whom the work is primarily prepared.

I have opened these discussions (Chapter I) with a study of the efficiency of the Roentgen-rays as they are used as a basis for diagnosis, prognosis, and treatment of dental infections, and have presented abundant evidence that conditions are often, if not generally, not as they are supposed to be on the basis of the roentgenographic appearance.

A study of the organisms involved in dental infections (Chapter II) strongly suggests, if it does not indicate, that elective localization, when such exists, is not determined by the strain of organism which has chanced to invade but primarily upon the environment produced by the host.

I early found that it was quite impossible to harmonize the new data developing in my researches here, and the currently accepted fundamentals of diagnosis, prognosis, and treatment of dental infections. One of the confusions, amounting practically to a paradox, was that so many individuals have so much evidence of dental infection, when judged from the presence of fistulae and pus, and yet have had no systemic involvements such as have been attributed to dental infections; therefore, it has been argued, if these individuals with so much evidence of infection have no disturbance, why presume that patients with less infection (and often exceedingly small quantities when judged from these same standards of physical expression) have their rheumatic group lesions aggravated or induced by the dental condition?

In the light of the new interpretations (Chapter III) these conditions are quite understandable and harmonize the clinical and the experimental. In a word, there has been a tendency to confuse reactivity on the part of the host as being activity of the invading organism. To illustrate: Danger has been interpreted in general to be quite largely in proportion to the following: the size of the rarefaction, the presence of fistulae, and the quantity of pus, on the ground that these conditions indicated much infection and on the belief that, since quantity and danger were synonymous, therefore those individuals with less physical evidence had less infection and hence less danger. These researches have shown that potentially teeth producing these two types of conditions may be considered quite equivalent, each to the other.

In practically every instance where an infected tooth is placed beneath the skin of a rabbit or other laboratory animal, if that animal is not killed by the infection, it produces an encapsulation of the tooth with a structure which is very similar to a well organized dental granuloma.

The granuloma turns out to be primarily a quarantine station, which, when efficient, protects the rest of the body. In those instances where the fight is to a finish immediately about the tooth, that activity appears to protect all organs and tissues. It is then an efficient quarantine. When this quarantine ceases to be efficient or, as in many cases where it has never been efficient and adequate, the warfare is not to a finish immediately about the infected tooth and must therefore occur in various organs and tissues of the body. That organ or tissue tends to be the first to break which is most weakened by overload or by the inheritance of a deficiency in the defensive

mechanisms for that organ; and just here we have apparently made another new and important observation: namely, that this quality of organ susceptibility is a unit character of inheritance independent of all other organs and tissues, following the general mendelian law. (Chapter IV.)

Those individuals, therefore, with the large zones of rarefaction and no rheumatic group disturbances present the very clinical conditions which we should anticipate; and, similarly, those without an adequate local reaction must make that fight elsewhere, and tend to have the systemic involvements.

The question as to the nature of the cellular activity is influenced by many things, some of which combine to determine whether there shall be a rarefying or condensing osteitis.

It is therefore not surprising that we can classify individuals either on the basis of these structural changes, which we may refer to as types of local dental pathology, or on the basis of their presence or absence of systemic disturbances, and each method of classification checks against the other for the various individuals. (Chapter V.) This is like balancing a bank account. Indeed, these laws run so true to type that in very many instances a general observation can safely be made as to the family as well as the patient's history from data from either one of these two fields; and here another new light on the question has been found in that dental caries and all its sequelæ tend to increase in severity with the susceptibility to the rheumatic group lesions, and tendency to periodontoclasia conversely tends to decrease. (Chapters VI, VII, VIII, IX.) As the potential danger increases, there proves to be a decrease in local discomfort, indicating that symptoms, as comfort or discomfort, may be most misleading.

A phase of this work, which is of particular interest, is the new approach to this problem through the chemistry of the blood and other fluids. This again furnishes a check as well as a means of diagnosis for border-line cases which is of exceeding great importance (Chapter XX) and very far reaching in diagnosis.

Another new development is the checking of the bactericidal property of the patient's blood for streptococci, and it is most surprising and important that here again we have a check on the groups, which is quite constant and dependable. (Chapter XLI.)

In Volume I, I have undertaken to give new interpretations of the various phenomena in the light of these new data; and while I have no thought that these are complete and final, I have been applying them in actual clinical practice for several years under very carefully controlled conditions. These are presented in Volume II as an exhaustive clinical research and are primarily a check on the interpretations. I have also undertaken to make Volume II somewhat of a catalog and atlas combined of the various rheumatic group disturbances which seem to be frequently related to dental infections.

Of course, I know, this work is iconoclastic and revolutionary and, since there is so much confusion and wide misunderstanding and because there is abundance of lethargy and a side-stepping of responsibility due to these confusions, I have deemed it necessary to present the subject in such a strong clear manner that it will produce, if possible, a greater interest in humanity's welfare, for I personally see no escape from the overwhelming evidence that many of the degenerative diseases are having an important, and often a principal, contributing factor in obscure dental infections such as a great many of the members of our healing professions are, through their lack of information, largely the result of misunderstanding and misinterpretation in the past, seeming to feel it their duty to either defend or think unimportant.

We cannot possibly have prophylaxis in its true form until we go back not only to the removal of fundamental causes but to the prevention of the conditions which create them; and just as northern Eskimos, for whom the disease measles is practically always fatal, never die with measles unless they are exposed, just so in large part a large army of individuals, who are born with the handicap of a deficient defensive mechanism for streptococcal infections, may never need that defense if they are prevented from having focal infections. All of this means much more research work and much more adequate campaigns for the prevention of the degenerative diseases, all based upon new data which are being and will be developed through adequate research.

These studies have thrown side-lights on other types of disturbances than the rheumatic group lesions. One of these is the role of focal infections, and particularly dental focal infections, in producing sources of antigen to which the body becomes sensitized through its long continued irritation and combat with it, and in whom there develops in some instances a state of sensitization which may express itself in several types of tissues, particularly the skin.

These individuals are practically all found in one particular group classification on the basis of susceptibility. It is not probable that it is entirely accidental that a majority of the patients with a history of the development of cancer are found in this same grouping. I have not gone so far as to suggest that these conditions are the cause of the cancer, but have given evidence which suggests that they seem to be able to produce precancerous conditions. I have gone to two of the cancer clinics to discuss this matter with the principals and I do not find either there or in the literature evidence that this association has been observed before.

Another important new group of data, which has grown out of the tabulation of a large number of individual and family histories, reveals a relationship (probably associated effects of a common cause rather than as cause and effect) between certain types of dental pathology and the presence of a susceptibility to tuberculosis, or perhaps more correctly stated as the absence of an adequate defense for tuberculosis infection. Since writing the chapter in which that is discussed—namely, Respiratory Tract in Volume II—I have gone to Saranac and studied this matter with some of the men there and found much evidence in substantiation of this new association, with no evidence controverting it.

If, however, as seems probable, there is a direct relationship between capacity to calcify a fibrosed tubercle and the capacity to produce a condensing osteitis in the presence of a streptococcal infection, or, otherwise stated, if the tendency to decalcify osseous structures in the presence of an irritation with the clinical symptoms of periodontoclasia and freedom from dental caries is related directly to the fact that those individuals do not tend to be successful in healing a tuberculosis infection, possibly through a calcification process, we may have an important new approach to the soil or fundamental background which is necessary for extensive tuberculosis invasion, and thereby to the pathology of tuberculosis. I am, of course, trying to extend our researches in these various fields as rapidly as our limited facilities permit.

If conditions are as the data suggest, the problem is much larger than we have thought it to be and much more intimately related to individual and national welfare, and I have tried to present the matter in a way that will arouse the professions to a realization of the community rather than the professional aspect.

8926 Euclid Avenue.

The Purity of Nitrous Oxide

By INGO W. D. HACKH, San Francisco
(Research Laboratory, Western Nitrous Oxide Company)

THE recognition of laughing gas as the ideal anesthetic, susceptible to any required variation in the hands of the expert surgeon, has many times been retarded by individual cylinders containing impure gas. Thus, the user was not absolutely sure of the effects which a given cylinder would produce on the patient. It is likewise a phenomenon sometimes observed that an individual cylinder may give perfect results in the beginning, but, when only one-fifth to one-sixth of the compressed nitrous oxide is left, coughing and nausea are produced in the patient, causing the remainder to become unsuitable and even dangerous. It is the purpose of this paper to show the causes which give rise to the occasional unreliable results obtained from nitrous oxide, and thereby aid in the establishment of higher standards in its manufacture.

To begin with, the official tests prescribed by the Pharmacopoeia are not sufficiently delicate or to the point! Experience shows that the most common and the most dangerous impurities are not carbon dioxide or halogens for which official tests are prescribed, but the other oxides of nitrogen—especially the poisonous nitric oxide, for which no official test is provided. The formation of these other oxides during the manufacture of nitrous oxide by heating ammonium nitrate can not be avoided. Traces are formed even with the most careful operations, hence the manufacturer must remove these traces from the gas and maintain a careful check of the finished product. By the official tests, this cannot be detected, for the amount of other oxides of nitrogen should not exceed 10 parts per million, by volume.

But, even when a day's manufacture of nitrous oxide is analyzed and found satisfactory, the manufacturer's responsibility does not end. It is a curious phenomenon that, when pure gas is filled indiscriminately into the steel cylinders for shipment, one or the other of these cylinders shows an increase in

the content of other oxides of nitrogen. In other words, in filling one hundred cylinders with perfectly pure gas, there may be two to three containing impure gas. The reason for this phenomenon is found in the individual cylinder, namely, the frequency of its refilling. Because of the physical properties of nitrous oxide and the other oxides of nitrogen, they will evaporate or escape more readily from the cylinder, leaving the impurities behind, which naturally accumulate more and more in the cylinder, if it is not cleaned before each refilling.

This explains likewise why the last few gallons of gas drawn from a nearly empty cylinder may sometimes have a nitric-acid odor.

Fortunately, all of these manufacturing difficulties can be overcome and a perfectly pure gas produced. Likewise, it is possible for the surgeon to guard against impure gas by a few simple tests. Naturally, these tests are not to be looked upon as an analysis or as analytical tests; they are merely aids in detecting doubtful cylinders. It has been pointed out that the cleaning of cylinders plays an important role in removing the unavoidable small traces (less than 10 parts per million) of nitric oxide. The following test will indicate a clean cylinder:

Test for Clean Cylinder

Invert a cylinder and let stand for about one minute; when still in the inverted position, bring the nozzle about one-half foot from a filter-paper tacked on the wall. Open the valve rapidly so that a good stream of nitrous oxide spray issues and forms a small cone of nitrous oxide snow on the paper. Pure gas will give an absolutely white and colorless snow. Impure gas will leave a colored residue. If gas is contaminated with nitric oxide, the snow will be somewhat yellowish green. Oil from the compressor will show yellowish brown, while rust from the inside of the cylinder may be from brown to black. If the gas is not perfectly dry, the moisture will show on the paper. (The writer has found a cylinder of nitrous oxide from which he drew a wine-glass of water, while frequently a slimy mud of oil and rust can be blasted from unclean cylinders.)

A further test is the odor. It should be the invariable practice of the anesthetist to inhale a few breaths of gas before giving it to the patient. Nitrous oxide has a very faint and pleasant odor, while nitric oxide will give an acid odor resembling, in higher concentration, the odor of chlorine or concentrated nitric acid. Unclean cylinders will have, especially toward the end, a more or less musty or stale odor, caused either by lubricating oil or by moisture.

Another safe-guard for the careful operator is, to place a small wash-bottle of potassium-permanganate solution between the gas-machine and the gas-mask, at any convenient point. The solution should be often renewed as it is not permanent and will deteriorate in time.

If the nitrous oxide is dry and contains no determinable trace of moisture, the valve will not stop up, on opening, but will give a uniform and continuous stream of gas;—provided the valve is not opened so far that a too rapid expansion of gas will liquefy the remaining gas to liquid nitrous oxide. The liquefaction of nitrous oxide happens only in case the safety valve blows off or the valve is fully opened, and gas escapes unchecked into the atmosphere. In ordinary use with a gas-machine, this will hardly ever happen and any freezing of the valve is due to moisture. To make an approximate test of this possibility, attach a glass tube to the valve and place it in a glass of water, then open the valve so that about three to four bubbles per second pass through the water. Let stand in this position and observe the regularity of the bubbles. There should be no irregularity in the number of gas bubbles passing through the water if the nitrous oxide is dry. Moist gas will gradually decrease the number of bubbles and finally stop entirely or bubble irregularly.

The few tests described give the gas-user some indications of the purity of the nitrous oxide and call attention to the *necessity of setting higher standards in gas manufacture.* It is *most* desirable that the official tests be made more exacting, especially in regard to the dangerous nitric oxide.

It is the conviction of the writer that, with a pure nitrous oxide to work with, the anesthetist has an ideal and reliable medium and that many, if not all, of the difficulties in gas-administration are either directly or indirectly due to impure gas.

Surgical Seminar

Conducted by GUSTAVUS M. BLECH.

Solution of Problem No. 14

RECAPITULATION of the Problem. This problem was published in the February issue. It concerned a young woman with the following history: With the exception of measles and pertussis in infancy, the patient had been in good health, and had married when 23 years old. She continued to menstruate for nineteen months after marriage and, with the exception of a slight indisposition during the first twenty-four hours, this function has always been normal. The cessation of menstruation was soon followed by other symptoms pointing to pregnancy which ran a normal course and terminated in the spontaneous delivery of a seven pound boy, labor having lasted a little over twenty-four hours. The patient left the puerperal bed a week after delivery and, at the expiration of another week, returned to her occupation as a stenographer, which she had followed before and after her marriage. She fed her child artificially

A few months later, she began to complain of lassitude and inability to concentrate on her work, vague pains in both sides of her lower abdomen and aggravation of constipation which had existed for a long time before. Resort to laxatives produced only temporary relief; the pains in her abdomen increased to an extent that she felt impelled to consult a physician of her own sex.

The woman physician made a vaginal examination and made a diagnosis of retroflexion of the uterus, for which condition she urged operation as the sure means of overcoming all symptoms. The patient hesitated and accepted a proposition to take a course of local treatments as a sort of therapeutic or, rather, indication test, since failure to derive any good from local treatments would only confirm the correctness of the opinion that surgery was absolutely indicated. Two months of vaginal tamponing or medication having failed to improve the patient's condition and, thereby, convinced of the necessity of surgical intervention, the patient underwent the Alexander-Adams operation to correct uterine malposition via the round ligaments.

The operation, which was technically successful, proved a failure as far as curative results are concerned.

When the editor saw the patient, some time later, he decided on an operation, but one based on an entirely different diagnosis than that given by the woman physician. The correctness of this therapy was proved by both, the autopsy in vivo and the fact that the patient made a full recovery.

The requirement was two-fold in character. First, it was asked wherein the woman physician erred; for, had she not erred, she would have cured her patient; and, second, what was to be borne in mind when the patient presented herself for the first time, with reference to a possible cause or causes of her trouble.

Before presenting the requirement, it was pointed out that, without additional data, no diagnosis of a satisfactory character was to be expected. In other words, a general discussion of the second requirement was all that could reasonably be expected by any leader of discussions of this type.

General George Acheson, Kingston, N. B., Canada:

Gen. Acheson can always be depended upon to open the discussion. His replies or solutions are among the first to reach the Seminar and they are always like a whip when ye department editor gets a bit drowsy or perhaps infected from the apparent lassitude of our readers.

With reference to the above problem, the general says:

The history and symptoms of this case suggest subinvolution of the uterus, which may or may not have been complicated by retroflexion; in which case an Alexander operation would do no good, and, in fact, is contraindicated.

Subinvolution might be expected for the following reasons:

(1) Getting up too soon after delivery, (2) Nonsuckling, (3) Sedentary occupation, (4)

Constipation.

When first consulted, we would have in mind laceration of the cervix or perineum, endometritis or salpingitis. The possibility of enteroptosis is something that, too, must not be overlooked. Treatment, to be effective, whether medical or surgical in character, must be based on a correct diagnosis and this depends on the findings after physical and general examination.

Dr. E. C. Junger, Soldier, Iowa:

Our good friend from the state, in which everything seems golden, from the cupola of the state house to the fields in bloom and the hearts of some good doctors, helps out this time as usual and breezes into our meeting room like this:

I want to say, and I mean it, too, God bless any young wife, who has enough ambition to keep at her ante-nuptial occupation, even at that delicate period when she becomes pregnant and should let up a bit. After this particular young mother had given birth, she should have given up the very idea of returning to work. Yet it is a well-known fact that many a hard-working woman has less pelvic disturbance than the idle society woman.

The lady who has furnished the material for surgical problem No. 14, doubtless had a perimetritis with subinvolution and adhesions that bound the retroflexed uterus to the sigmoid flexure.

The existing pelvic congestion, which is the immediate cause of the pains, lassitude and constipation, was, in all probability increased, and through this all phenomena were exaggerated by the operation for the shortening of the ligaments, even on the supposition that the pelvic floor was intact.

Intrauterine treatments with the usual methods to deplete the uterus will do much good in pelvic and uterine congestion, provided the latter is free from adhesions.

The woman physician should have made sure that the uterus is free, that it could be replaced and that there is absence of involvement of the adnexa.

Congratulations, Dr. Blech! It takes a man to understand a woman. I feel better, too. Regards.

Dr. Louis Savitt, Chicago, Ill.:

Inasmuch as the requirements, or rather the note concerning them, in the February Seminar, do not call for an exact diagnosis, I venture to submit the following:

The woman physician erred in performing the Alexander-Adams operation. I do not care whether the patient had, or had not, a retroflexion of the uterus. Even if she had one, that in itself is meaningless. To go ahead and do an operation which deliberately shuts out discovery of anything else intraperitoneally that may possibly add to, if not directly cause, the symptom complex from which the woman is suffering, is, in my humble opinion, an error of judgment.

A woman coming to consult me with a history similar to the one presented in your 14th problem, would, of course, suggest a toxic condition due, in all probability, to the constipation, which in turn may be due to atony of the bowels or to some neurosis. Inasmuch as you have indicated that your diagnosis led to an operation, I am inclined to the belief that you operated for some constriction of the colon or possibly an old, low-grade appendicitis or periappendicitis. All these conditions suggest themselves as possibilities and should be searched for until definitely excluded or found, as the case may be.

Editorial Comment

I regret to say that I have been rather disappointed in the participation accorded this problem. I have received neither as many contributions as I had anticipated, nor even as good ones as has been the case with some preceding—and, I might properly add—less interesting problems.

Come on, my friends! I do not want to catch your attention and cooperation with material promises, but I will say that this department will develop into something worth while if twenty live-wire readers agree to contribute serious discussions—not merely (for example) a personal note with the remark: "I am quite sure this woman had an old duodenal ulcer." Such an opinion would give me exquisite joy. I wrote to the doctor in question as follows: "Thanks awfully, old man, for your very nice letter, and especially your opinion that the woman in the problem had duodenal ulcer. That was a splendid idea, but have the goodness to send me the why of your opinion. By what process of reasoning do you arrive at the diagnosis? It matters not whether your diagnosis proved correct or otherwise, the main thing is, that you give reasons for your opinion, and I shall be glad to publish your contribution."

The answer, although over two weeks have elapsed since sending my note, has not been forthcoming. The gentleman concerned, lives in Indiana and mail takes just one day for delivery.

Oh, no, this is not a singled-out instance. I have given up time, badly needed for pressing

duties, to get in touch with a number of our readers who are content to send me their diagnoses, often by giving one word on a prescription blank. I cannot understand this attitude at all, since, whatever satisfaction comes from mental labor, is in the labor itself. If Jones of Jonesville feels he can solve a problem, let him come out and do it properly, not send me a postal with the mere diagnosis on it. I am not a puzzle editor, nor do we give away prizes, nor is this an examination course.

Now that this is off my chest—and I hope I have succeeded in arousing some colleagues to help themselves by helping us—let us return to work.

The first requirement called for a discussion as to wherein the woman-physician erred. What I have to say may sound as if I were a dyed-in-the-wool antifeminist in medicine, but the cold fact remains that this particular physician, who has quite a popular reputation, has been negligent and slovenly in her diagnosis. This was her principal mistake. I have questioned my patient sharply: "Has Dr. ——— not examined your chest, your abdomen; has she not asked for some urine?" "NO!" All she had was the vaginal examination, and the physician knew at once what was the matter with her, and ten dollars, please! Oh, yes, that may impress many who know no better. But, in the long run—. It did impress our patient and she went there for some time having glycerine tampons put up against the uterus—no, not even a pessary, and perhaps that was a good thing itself, for an ill-fitting pessary may cause more harm than a battalion of meddling gynecologists—and then, again this impressive "I told you so!", and the evidence is complete and the poor little woman delves deep into her purse and proceeds to the operating table—a hopeful victim of misplaced diagnosis.

Oh, yes, they took her history at the hospital, they sent a specimen of urine to the laboratory, her blood was taken—in all probability for a coagulation test—but the main thing, the diagnosis, was not investigated, for that would be unethical and contrary to the interest of the physician who supplied the hospital with bread and butter—and the operation proceeded.

Then came the second error. The operation *per se* technically was done *lege artis*, that is to say, the surgeon actually located the cords through the tiny incisions, actually shortened them and neatly closed up the skin. No serious damage had been done and the patient made an uneventful recovery. Interns made a mental note of another operation, technically perfect, to be placed to the credit of the lady surgeon with her popularity in all female activities, and more palms are waved over her modest brow by her "cosexionists". When this lady dies, the newspapers will give her quite a write-up and some political magazines will bring her picture. But, I fancy, the *Journal of the American Medical Association* will give her age, address, date and place of graduation and cause of death. Only that and nothing more. *Sic transit gloria mundi!*

But, our young friend Dr. Savitt, a young male, struggling for recognition, who has done more surgery in one week during the war than he can possibly secure now during a month, condemns the surgeon-laureate with this stinging rebuke thrown in: "she did an operation which deliberately shuts out discovery of anything else intraperitoneally that may possibly add to, if not directly cause, the symptom-complex from which the woman is suffering".

Dr. Savitt, did not have to say anything of an humble opinion, for his judgment is surgically ripe and sound, and he has the moral right to rebuke surgeons who still ride surgical hobbies. The Alexander-Adams operation should be relegated to the archives of the history of medicine.

However, it is not Savitt alone who condemns the therapy. General Acheson, an older and well poised man, says virtually the same thing: "the operation will do no good—it is contraindicated." On the other hand, I am not willing to admit that Dr. Junger is right when he says that the operation has aggravated the condition. Otherwise our verdict is unanimous.

Now with reference to the second requirement. While no diagnosis was expected, I did want a discussion of the conditions which were likely to cause the troubles with which we are concerned.

General Acheson gave a good talk on subinvolution and seemed to stress in addition, the possibility of enteroptosis.

Dr. Junger, too, is thinking of subinvolution, but adds the thought of a possible perimetritis with adhesions involving uterus and sigmoid flexure.

Dr. Savitt is affected by a haunting fear of an intestinal intoxication of more or less organic origin which does not exclude an old inflammatory process of the appendix.

All these thoughts are good and, I confess, I had them in mind, when the patient presented herself with the history essentially as

given in the problem.

There was however something in addition that occurred to me, and that was, intestinal adhesions, higher up than at the pelvis. That is to say, I did not think of any direct relation to the uterus or its adnexa. In other words, I had in mind what Dr. Savitt no doubt had when he spoke of a low-grade inflammation of the appendix or adjoining viscus. The only fault with that was, that he did not mention it as of the adherent type.

My reason for this was, that these troubles are frequent and intractable with reference to etiology, except after a thorough investigation, and are the very ones to cause symptoms of the kind suffered from, which do not yield to ordinary treatment. Certainly, no malposition of the uterus had any relation whatever to the trouble. That I can assert only *ex juvantibus,* but the story was altogether too plain to permit of a mistake in that particular direction.

Why did I think of that particular form of intestinal adhesions? Doubtless, General Acheson and I had the same thing in mind, for, in his reasoning process, he weighed sedentary occupation and constipation as etiologic factors. That little remark speaks volumes of diagnostic philosophy, for, in our desire to lay the finger on a definite organic lesion, we forget the individual as a human being. That was the mistake of our friend, the woman gynecologist. Her mind grasped only diseased uteri, pelves and the organs therein, and, with such a state of mind, a mere introduction of the index finger into the vagina is bound to find the *fons et origo* of all ills that female flesh is heir to.

But we, who are not in such a hurry, not so all-wise and cock-sure, nor so solemnly theatrical as to feel that our profession is a sort of sleight-of-hand art, we do think when we see a sick individual before us that there may be more the matter with her than a Latin disease to be indexed under such or such heading.

And then we spend a lot of time in the anamnesis. We allow the patient to tell us her story. Even when her symptoms run away with her, we do not stem the flow of words, but we direct it into the proper channel. We form a mental impression of her past life, of her mentality, of her habits, and we begin to crystallize the essential and important points into material for our future diagnosis.

Then comes the physical examination.

In this particular case, there was little wrong with the pelvic floor. The cervix was not lacerated, at least not to an extent to merit consideration, the uterus was not subinvoluted, much to my own surprise. In spite of the unnecessary operation, I found the uterus retroflexed, but freely movable. She was probably the same way before the operation and I, for one, would have ignored it. Not all women with backache suffer from retroposition of the uterus or from floating kidney. But I did find, on abdominal examination, tenderness of the cecum, distention of the intestines, while an attempt to move the bowels between the fingers gave the patient cause for serious complaint that I caused her to suffer, irrespective whether I performed the diagnostic maneuver on the right or on the left side of the abdomen.

There was no doubt in my mind that we have a case of intestinal adhesions against which medication and diet and rest and exercise and what not would be futile. It proved futile after a short trial. Laparotomy confirmed my original diagnosis. Only, the adhesions of the cecum were not one-fifth as hard or as extensive as those found at the sigmoid flexure, which latter gave my preoperative diagnostic pride something of a jolt. However, we did a good job technically. We not only severed the adhesions but we sutured the serous surfaces in a manner to guard against recurrence.

Our little woman made an uneventful recovery and had been well for two years, when I entered the army.

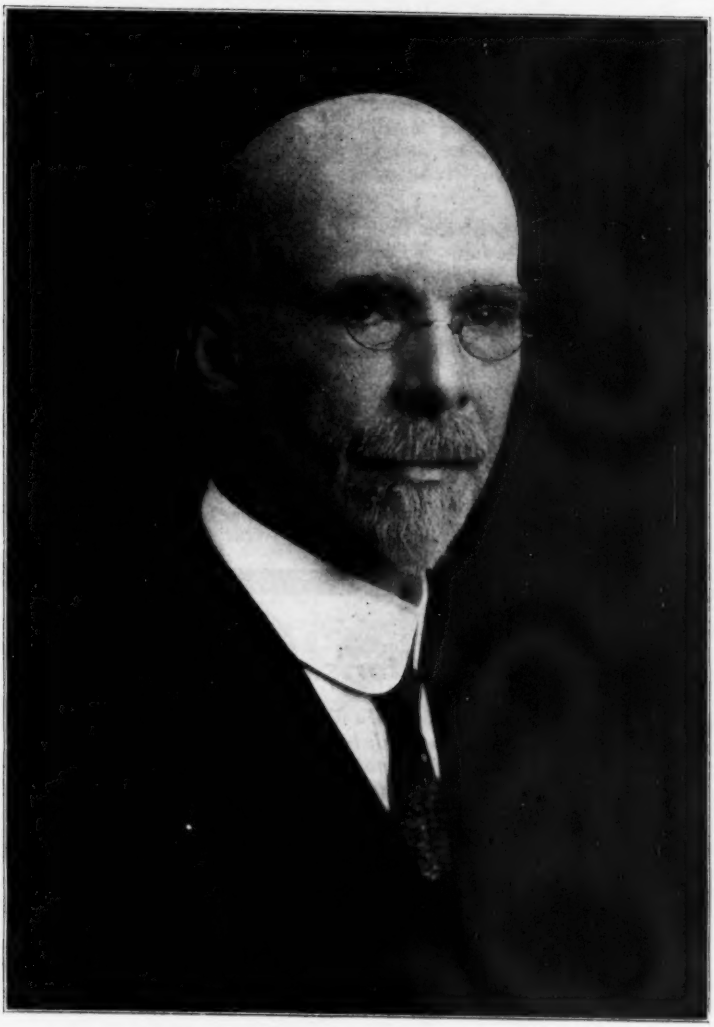
Just to satisfy myself that I could conscientiously speak of a real cure, I found my couple in a Chicago western suburb a few days before writing this. Both, the husband and wife, called on me. There had been two children since; there is the bungalow; there is no longer a stenographer. But there was a woman who knew how to take care of herself.

And this leads me to a remark inspired by General Acheson: the puerperal care. Many there are who will say that childbirth is a physiologic function to which we pay too much attention. They will support their theory by the experience with primitive people, who give birth in the field, tie off the cord, wrap up the child and go back to help in the harvest.

That is all right for primitive people, and we can only envy them. But, the great thinkers who have written encyclopedic works on medicine have gathered their experiences among the socalled civilized peoples, and, whether we actually are civilized or not, we must deal with facts and not theories, and adapt our work to actual conditions and not to mere theories.

[*Concluded on page 274*]

The General Practitioner



Dr. William Frank Rittenhouse
1852-1924

A FEW weeks ago, Doctor Rittenhouse called us over the 'phone and told us that he was too ill to prepare his customary monthly contribution to CLINICAL MEDICINE. He had always been in the habit of sending his manuscript before the first of the month, giving us ample time to prepare it for the printer and to have it set up. This punctuality was so unusual as to arouse admiring comment. When the proof of "My Twenty Favorite Drugs" (this issue, page 237) was returned by Doctor Rittenhouse, it had attached a note saying merely, "I am very ill." Two days later, Dr. Ernest V. Rittenhouse informed us that our dear old friend and faithful associate editor had passed away in the forenoon of March 14, thus closing a long, useful life and a decade of almost incessant suffering. —R. I. P.

Doctor Rittenhouse, of Pennsylvania-German extraction, was born on a farm in Lincoln County, Ontario, Canada, and received a common-school education during the winter months, working on his father's farm in summer as soon as he was old enough. From his seventeenth year on, he taught school until, at the age of thirty-one, he was obliged to resign the headmastership of Central School, at St. Catherines, Ontario, to which he had attained in course of time, because of failing health.

At that time, he began the study of medicine which he completed in Chicago, where he received the degree of M. D. from the College of Physicians and Surgeons, in 1886. He was in active practice until ten years ago, and held the chair of obstetrics in the Illinois Medical College, of which he was one of the founders. For a time he was also president and professor of obstetrics at Jenner Medical College.

For the last ten years, Doctor Rittenhouse was confined to his bed or to a wheel chair and suffered intensely because of spinal disease. At best, he could move about slowly on crutches and, during specially good periods, he was able to enjoy automobile rides. In spite of his great suffering, he was a diligent student and refused to be idle. He studied and taught; added Spanish and Italian to the three languages (English, German, French) which he already was familiar with, and wrote much.

Doctor Rittenhouse never permitted his illness to deprive him of his sense of humor. He enjoyed a good story and was able to tell it as well as any of us. The articles which he contributed to CLINICAL MEDICINE were remarkable for their careful preparation, for the sound teachings they contained, for the spirit of helpfulness that pervaded them and for the simple and direct, yet carefully chosen language in which they were clothed. We shall miss Doctor Rittenhouse's kindly and cheerful philosophy and we shall often think of him as one whose life teaches an impressive lesson.

The Doctor's Epitaph

THE Doctor Sleeps! No more at Pain's behest
Shall he relinquish his much needed rest;
No more his skillful hand and tender heart
Shall give to some new life a proper start.

THE Doctor Sleeps! His fighting days are done,
But hundreds live because of bouts he won,
And, generations hence, those will draw breath
Who would not BE *had he not vanquished Death!*

THE Doctor Sleeps! Might we his deeds recall
His name would blaze in Fame's enmarbled Hall
But, serving modestly through life, it now seems best
To merely write "HIS WORK SURVIVES," *and let him rest!*

C. H. C.

Good Medicine

Let us learn as we go, but not forget what we know

Conducted by GEORGE H. CANDLER

Let Us Play

The lambkin frolics in the fields,
The lightning in the sky;
The mule-colt kicks up *his* hind legs—
So why not you and I?

IF any of you can advance any good and sufficient reason why doctors should not gambol now and then, like all other animate beings, you are now to declare it. Note, please, that I said gam*bol* not gam*ble*, which latter is a most reprehensible practice and one which, I am reasonably sure, no physician would indulge in—unless he felt certain that he could best the other fellow. There is a therapeutic difference between gamboling in the open air and gambling for hours in a nine-by-twelve smoke-filled room, especially if during the séance *you* hold three of a kind pretty often when someone else has a straight flush. That is not good for your health.

On the contrary, what could be more elevating and invigorating than going off to some wild, wild woods resort and to fishing for real fish? There must, of course, be *some* water in those w. w. woods. Nothing, perhaps, except shooting ducks or quail, or still-hunting for your buck in season. For those who don't like black flies, wet feet or "sow-belly and cakes" for breakfast, golf near home may be the thing, but golf, in my estimation, is provocative of profanity and much thirst which, nowadays, it is difficult to satisfactorily quench. The surreptitious trip to the "locker" is really much more interesting than chasing a pock-marked pill out of sand traps and long grass. However, there are a whole lot of Scotchmen and fat fellows who need some inexpensive excuse for exercise (or at least for getting away twice a week) and for *them* gol-luf may be ideal. Anyhow, for humanitarian purposes, these gentle hazard takers will be here classified as one better than the Mah-Jong "pungites." The gol-lufers can swear, but they *do* get out of doors and work up a gentle perspiration; whereas, the Mah-Jongers, who also swear strange oaths, don't get out so you can notice it. They're walled in. A lot of 'em, too, get the itch—Chinese variety. Still, some eminently proper people claim that these gentle people gamble more effectively than those who go out into the wild places to capture beasts, birds and fishes. Maybe they do, but I've seen some stiff games after a hard day afield or afloat. And no one said "pung" either, though occasional remarks might be heard about "punk" deals and fat pots.

However, Hoyle and other fictionists have already given us abundant literature upon the proper handling of kings, queens and jacks—to say nothing of deuces—so I shall confine my remarks to those open-air sports and approved indoor recreations which the prudent physician may indulge in without fear of being misunderstood.

The New Department

As everyone who reads this journal (and, who doesn't?) is aware, it has been suggested that a department devoted to recreation be established. The idea seems to have met with favor, but the things that should be discussed therein, and who should discuss them, remain unsettled. Unfortunately, also, there seems to be some difference of opinion as to a desirable name for the department. I suggested "The Nuttery," but was firmly told that "The Doctor's Off Hour" would be much better. Of course, that's all right, if you want to insist that in his "off" hour the doctor isn't nutty—it has always seemed to me that he was, more or less. Anyhow, he who can't be "nutty" now and again is indeed to be pitied—my sympathies are entirely with the semi-intelligent bipeds who demand many "off" hours in which to be "nutty" to their hearts' content, yes, even though they are "nuts" on radio—the most insidious, all pervasive and financially prostrating cranial disorder with which humanity is afflicted. It has made men sit up later of nights than they ought to; it has kept

the family walking on tip-toes, saying, "H-ssh!" and converted more women into quasi-widows than any other "nuttity" in the world.

The Curse of the Radio

Bald-headed professors try to get Pittsburgh, first with one hand, then with two, and finally sweating, shaking and profane, succeed, by sticking their ears in the horn, in hearing an announcement from the nearest broadcasting station. If the announcer happens to say that John Smith, of Tullaloosa, Saskatchewan, has wired in that he once heard KDKA playing "Doodle-Do-Do," that heretofore veracious professorial gentleman is quite apt to go forth next day and tell everyone he meets that he got Alaska on his one-tube set. Which, of course, is "nutty" to say the least.

And that isn't the whole of it: not by a long shot. The man who starts off with a nice little crystal set, that he carries proudly home under his arm, feels, as soon as he has learned to tune in "local," that he ought to possess a tube set. So, he hies him forth and gets one; then, sinking deeper, he denies his wife the new coat she has been talking about for weeks (she probably has six now but needs seven) and sneaks in an amplifier. One month more, and he wants a three- or four-tube set, with a loud speaker—"so that the whole family can enjoy themselves." They do. Ask 'em! Then, when they are all on the verge of hysterics and needing shoes badly, Father decides that he ought to have a supply of batteries and home chargers, so that the wail of the saxophone or market quotations (to say nothing about lectures on "how to make your hens lay more eggs") shall never cease from 7 p. m. till the milkman puts the family milk on the back porch. He thereupon buys a powerful power-plant and immediately becomes disgusted with the distance-getting capacity of his old set. "Now," he says, "I have got the hang of this fool thing and I want to get coast to coast service" on demand. From this time on, he reads hundreds of ads, cuts out all the pretty pictures showing five-year-olds tuning in on nine different dials and unfailingly selecting their favorite bedtime story teller whether he tell his story from Chicago, New York or San Francisco. If a little child can handle these contraptions of wonderful selectivity, Father is sure he can. So he mortgages the family car (or something) and buys him (and the now thoroughly dazed family) a Hyper-Super-Heterogeneous-Non-Howling Air King. It costs a whole lot of money and Father soon finds out that, if a babe can make it talk when he (or she) wants to, it won't often even whisper for him. Howl, it will. Shriek, it does. And—deceitful thing!—now and again, when Father least expects anything, it will bring in with "clear, undistorted bell-like note" (see literature) some song about "Nine o'Clock Sal" from a point two thousand miles distant. That this self-same song has been sung at least three times that evening within fifty miles of the operator's domicile, matters nothing. He has secured "clear reception" from a DX station and he is mentally incapacitated for one solid week thereafter. I know, because I've been there—am there now.

Do we, like other people, go "nutty" in our "off" hours? I'll say we do! At this very moment, I am considering seriously the possibility of putting in a motor-driven plant and that part of my house which isn't filled up with fishing rods and guns is cluttered up with wires, sets and batteries.

And, then, some prosaic, unimaginative bug comes along and talks gol-luf to us! Down with the Scotch! etc. I say—on every possible opportunity!

Golf and Fishing!

And that brings me to fishing. You may not see the connection between a Scotchman and fish, so I'll explain my train of thought. When you talk about a Scotchman, you think of Bobbie Burns. Burns are brooks, brooks become rivers and lakes. Further, the Scotch eat herrings, and a herring (even though smoked) is a fish. Other connections between the products of Bonnie Scotland and fishing are apparent to any well-trained intelligence. That really is how gol-luf obtained such a hold upon the public. It's dying out now. The eighteenth hole did it. The Greens are there, the Caddies still cad, and the amateurs foozle, but "Mon! Mon! the lockers are sae near dry 'tis awfu—simply awfu!"

The doctor who fishes must, of necessity, be a better man than the practician who doesn't. I fish whenever I can. Therefore, I must be a better man than the fellow who never catches anything but bacteria, which are small fry at best. The fishing-bug is a bad one, it is true, but it encourages veracity,* much as some drugs encourage phagocytosis. The true fisherman—the fellow who brings in ten or a dozen half- to one-pound brook trout at one time and tells you he caught them all on a dry fly—must be believed even though you see a

* How does this fisherman's veracity, or Waltonian truthfulness compare with that produced by scopolamine amnesia?—Ed.

worm wriggling out of a can in his pocket. The gentle Waltonian who explains to you that a nine-pound black bass (small mouth) was on his hook for twenty-eight minutes and then broke away only because the reel jammed, should be listened to with infinite respect. He has been "making history"—and relating it. Ten years from now, the bass will be at least two pounds heavier and the fight will have lasted forty-nine minutes, ten seconds, by his split-second chronometer. That is what history does. It repeats itself till it really grows. No "yarns" in history—just over-developed facts. In this case, we may take it for granted that a fish was caught and got away—they *do* do that. Still, in going, he afforded the fisherman an excellent opportunity to get away with something too. He'll try to. They *do* do that. But, prevaricate? Never! For this reason—the development of veracity—and many others, the doctor should fish at least two weeks each year.

Also Shooting

Then, to still further improve his mental and physical condition, he should shoot every day that it is possible to do so during the open season. If he really tries, he will be astonished to find how many days it is possible to shoot. Sometimes he will find himself shooting when it is obviously not at all possible to do so. He will then have attained the impossible, which is going some. Further, he will attain a tremendous appetite, a nice tanned skin and a lot of experience to be gained nowhere else than in blind, brush and field. He will know more about men and animals than the other fellow and will be able to think and act quickly in an emergency.

—and Camping

Therefore, let the doctor not only fish but hunt. And, when so engaged, let him camp out whenever possible. If there is anything which will take out mental and physical wrinkles, it is a two-to-four weeks' fishing or hunting trip à la gypsy. Take your car—or someone else's—tents, grub and all the necessary paraphernalia and just keep going till you hit the right spot and then stick there till your time is up or you're so overrunning with energy that you feel you just must get back and do something useful—or remunerative.

The man who fishes, shoots, canoes, camps, golfs (yes, we'll have to admit him), hikes, tours in his car or otherwise plays in the open, is, when not playing, a better man than the one who doesn't do these things and, as doctors can't be too good (on or off duty), it does seem desirable that the new department be opened and kept filled up each month with real red-blooded, honest-to-goodness play stuff contributed by the players themselves. The doctor should play. He who cannot play is fit for treason, Mah-Jong and boils. One might even expect to find him at pink teas. Of course, there are some eminently successful physicians who cannot fish, who hate open water, ploughed fields, stinging nettles and brambles, and would simply die if they had to sleep on hemlock boughs with a couple of porcupines rattling the pans around just outside the tent. These men might even object to gol-luf (as now conducted) and might consider it undignified to go swimming *au naturel*. Still, they might save the situation and play a *little*. Leap frog would be excellent for the short-legged round-about fellows, and the long, grave gentlemen might play London Bridge. One can see Barker of Baltimore, Osborne, Simmons *et al.* playing, with great abandon, "Ring Around the Rosie" under the majestic trees of some convenient (but dusty) forest preserve. I'd go fifty-three and four-tenths miles (by pedometer) to see that sight. The more I think of it, the more convinced I am that our great luminaries should frolic freely at least one day a week. They would doubtless live longer and—if possible—shine even more brightly than before. Unbending, moreover, in their gleeful games, they might get to really know Smith of Ishpeming, Jones of Granger's Grove and good old Doctor Potts of Wishwashwa, Wis. These men could, in restful moments, between games, tell Barker, Osborne and others of the elect, something about ordinary practice and, from the elect, the rural gentlemen might learn a whole lot of highly impressive phrases.

Considering all the circumstances, may we not hope that the coming season will be a playful one for many who never played much before? Further, that those who do play, especially those who invent new games, will write their experiences for the new department—whatever its ultimate name may be?

N. B.—Poker stories and enthusiastic accounts of some ball game played by professionals and witnessed from the bleachers will not be deemed suitable for publication. Touring tales welcome; fish stories swallowed whole; hunting yarns printed as they stand. Even gol-luf stuff admitted. Radio fanatics may broadcast on moderate wave lengths and the "Kodak as you go" man may even send in *some* of the things he "took." The pictures add interest to the tales.

Gentlemen, LET US PLAY.

Let's Talk it Over

Dr. Bryce's Talks

An Instructive Case Ethically and Clinically

THE case that I am about to relate occurred in my own practice, less than a year ago, and serves to show that a medical man's professional ability may sometimes be judged by his standards of ethics as well. I do not mean to say that all ethical doctors are very good practitioners, but I do say that our best educated and most successful physicians are usually the most ethical.

A man, about fifty, consulted me for what he termed "giddiness" and sick stomach. He was a linotype operator and complained that he missed the keys too often and staggered in walking. I noticed that he was quite unsteady as he entered my office. In addition to his constant vertigo, he complained of some headache, had a very poor appetite and vomited more or less of his food nearly every day. He had lost flesh considerably and was very weak and despondent. He was a bachelor and lived with a niece who knew less about dietetics and common-sense preparation of proper food than any woman I ever saw. They were well-to-do, lived by themselves and, instead of taking the pains to keep the proper table, just "made out," any kind of way, on bakers' bread, canned goods and as little home cooking as possible. I am giving these details as they somewhat influenced me in making my diagnosis.

He gave me a history of syphilis dated thirty years back in its inception; later, a course of salvarsan injections dating seven years back. In his weakened condition, with his giddiness and unsteady locomotion, he was a pretty good subject upon which to base a diagnosis of locomotor ataxia, especially if seen by a physician who believes in saddling every conceivable ill upon syphilis, if the patient has ever been so unfortunate as to have been branded with that word at any time in his life, or who believes that the sole science of treating this trouble consists in saturating the system with mercury, arsenic and the iodides, regardless of all contraindications so frequently present, particularly in late syphilis.

Really, I saw no evidence in this man of his ever having had syphilis. The tendon reflexes were thoroughly responsive, his pupils reacted perfectly, he was not dependent upon his vision to stand or walk, had never had any throat, skin, or other local signs of constitutional syphilis, and, while I attach but little importance to the Wassermann tests in the absence of clinical symptoms, I had two made by one of the best men in this line of work, who reported that he could not say positively that the patient gave sufficient evidence of syphilitic contamination to recommend specific treatment.

I regarded the case as one of profound anemia with gastric vertigo, and concluded to treat him on these lines, ignoring the probability of any active syphilitic influence. The man had been, not a drunkard, but a moderate drinker of whisky all of his life and had never been an abuser of it. He had worked steadily every day as a printer and linotype operator and was well off financially. Like many others, he was suffering from the effects of the withdrawal of an accustomed stimulant and actual food supply in consequence of the operation of the prohibition laws. (This is not introduced to start any argument, *pro* or *con*, as it is an issue upon which all can never agree). I endeavored to stimulate the action of the liver, improve digestion and conserve his strength, but made very little progress. This I attributed to his failure to properly observe my directions, which he could not do outside a hospital or institution where I could have him under absolute control.

The patient had a very officious nephew, who visited him every day and evidently wanted *his* family doctor in the case. He finally mustered up enough courage to ask me:

"Doctor, do you think uncle is improving any?"

"No."

"Any time you would like another doctor to see him with you, don't hesitate to call him in," he added.

"Any time *he* wants another doctor he shall have him," I said.

He grunted and quieted down. I knew what was coming, but intended to let him show his hand. So, in about a week, he told me that the *family* would be better satisfied if I called in another doctor. "The family" meant other relatives living at different homes in the city. The patient seemed much disturbed and said he was well satisfied, but the others wanted another doctor. I told them that I would not see the case again and they had better find a physician who would suit all parties. I gave them a statement that I had retired from the case to hand to any doctor they called. It happened that the man they called in was an ethical gentleman, though a stranger to me, and, after seeing the patient and learning the facts, he promptly declined to take the case and advised them to try to persuade me to continue my attendance upon him.

They came back with much apologizing and pleading, and I consented to take the case again. I ordered the patient at once to a quiet little private hospital and put him absolutely under the care of two nurses who, I knew, would carry out my orders to the letter. By regulating his liver action, correcting his dyspeptic troubles and by systematic feeding, with an iodized ferruginous bitter tonic, his condition had improved to such an extent in six weeks that he was eating three full meals a day without inconvenience and his vertigo had so far left him that he was sitting up most of the day, could dress himself without assistance and walk very well by himself for one whose only trouble was gradual convalescence from a most serious breakdown.

About this time, this same officious nephew bobbed up again and persuaded my patient to leave the hospital and go back home as he was doing so well. I advised him to remain for at least three months longer until he was fully recuperated; but, I suppose, to save a little money, he insisted upon leaving the hospital.

I explained to the family that his ultimate recovery depended upon a faithful adherence to the regimen upon which he had responded so well, and warned him that a return to his old method of living would throw him back seriously. Nevertheless, he went back home, called at my office once or twice and, in less than a month, was nearly as badly off as when I first saw him. I told him that he would have to go back to the hospital if he desired me to attend him further.

In a day or two, he called me over the telephone asking me to see him and bring in another doctor with me. This I promptly declined to do, but I notified his relatives to meet me at 10 o'clock at his home, the next day. A brother, *the nephew*, a niece and a cousin, an educated gentleman and one of Richmond's few millionaires, met me in the parlor next day at the appointed hour. I told them that it was apparent that they were not satisfied with my views and treatment and that my self respect demanded that I retire from the case, this time for good. But, I felt it almost a duty to myself and to the unfortunate man to give them a gratuitous warning. I said to them: "You declare you do not wish me to leave this patient and urge me to remain in charge, yet you insist in trying to force another physician into the case. I am satisfied that I am right and would not alter my line of practice by reason of any suggestions from a consultant, and you would only have a consultation fee to pay without being able to try out his suggestions, so I leave the case open to you and anyone coming after me."

"For the good of this unfortunate man, I call your attention to his condition when I first saw him and what it was after six weeks of *non-syphilitic* treatment. He had improved so much that you thought you could risk taking him home on your own responsibility. If he receives active syphilitic treatment, especially spinal injections of mercurial or arsenical compounds in full and frequent doses, he will be paralyzed and dead in two months."

The next day, they found a man willing to take his case, who informed them that he had locomotor ataxia, that he could not cure it, but could arrest it by prompt and correct treatment. His brother, who objected very strongly to a change of physicians, gave me this information, and I told him that they had us both on record and the results would show who was correct as to diagnosis and treatment. The poor fellow was sent to a hospital and received four shots intraspinally within ten days, when the family arose *en masse* and called a halt, as the bladder and rectal sphincters were completely paralyzed, feces passed involuntarily and urine had to be taken with the catheter! Bedsores rapidly developed, he never took another step and was dead within less than a month.

The object of this lengthy paper is, to again impress upon the readers of this journal the importance of refusing to be run from your

convictions through threatened forced consultations. The man who is quick to grasp a case of this, or any, kind from a reputable physician without hearing his version of the change is usually thinking more of his own personal interests than of the patient's welfare, and will try to do something spectacular to show that his deposed brother has left the important thing undone.

The mistake was made in diagnosis and a most serious one in treatment, for, there is a very wide difference in the appropriate active treatment of active and progressive syphilis and the management of the destructive changes in late syphilis, such as spinal degeneration, which did not exist in this case, as was proven by results in former treatment.

As I stated before, this case terminated within the past twelve months, and, though I retired from it, today I am the physician to everyone who was present in that room when I gave them my reason for quitting (except the dead man and the nephew), and this includes the millionaire cousin, too.

C. A. Bryce.
516 N. Tenth St., Richmond, Va.

A DAY ON AN ICE-PAN

Sometime during the night, the weather changed and, by morning, it was 30 below. The wind came up with the sun and, by nine o'clock, it was blowing a hurricane out of the northeast. I battled my way down town in the face of it, a piercing cutting gale, the air filled with flying particles of needle-like ice, lighted a roaring wood fire in the office stove and fervently prayed that my professional services would not be required on such a day.

The hours dragged on; the wind shrieked about the house, shaking the frail walls until they trembled. Powdered snow sifted through every crack. Not a soul stirred in the frontier village. Shortly after noon, I heard the booming of the breakers on the beach. "The ice must have gone out", I thought. The day before, it had extended out from the shore for some two miles.

It came mid-afternoon of that short winter day, and I was thinking of going home, when the harsh clang of the dock bell smote upon my ear. I sprang to my feet. That sound at that time could mean only one thing, somebody or some boat was in distress. God help the small boat out in such a gale as this! I threw on my heavy fur coat and started toward the shore. There were no more than a dozen able-bodied men in the village. Half of them were already there; the others coming.

"What is it?" I asked the man nearest me as I reached the dock.

"Merciful God, doctor, look yonder!" he exclaimed, pointing up the lake.

Screening my eyes from the blinding snow, I looked. Out in the smother of wildly tossing water, a dark figure crouched on an ice-pan hardly larger than a table cloth. As I watched, the figure moved. A great wave came careening down the lake, its crest capped with foam, the figure disappeared.

"He's gone," someone shouted.

"No, there he is," cried another as the ice-pan shot into view on the crest of the following wave.

Jean Ronceur, the hardy French-Canadian logger, took command. "Get out a boat," he ordered.

Willing hands pushed a stout batteau into the surf, only to have it hurled on the shore and battered into splinters. Another and another followed the first and met the same fate. No small boat could live for five minutes in that storm.

"It's no use, boys," Ronceur called. "If we were to get a boat out, it could not live in that grinding pack."

This was true. The broken masses of ice were grinding upon the shore and far out into the lake, tossing and whirling in the mad grasp of the storm.

The man on the ice-pan was slowly drifting down the lake before the gale. Masses of ice would collide with the piece upon which he crouched, it would careen until it seemed impossible for him to retain his hold. Giant waves rolled over him again and again, but he was always there when the ice-pan came to the surface.

We wondered at this, but afterward learned why—he was frozen to the ice.

It was growing dark. Already, objects were becoming dim and indistinct in the gloom. We kept pace down the lake with the drifting ice.

Oh, for a life boat!

A mile down the lake, a point of sand projected out into the water. We hurried forward and gathered upon the extreme point of this sandy peninsula.

The man must approach this less than a quarter of a mile. We strained our eyes until we made out his form, a tiny object seemingly far out in the water.

"Aye tank aye skal svim eet," said John Swanson, a giant Norseman who had sailed the North sea and the Baltic.

It looked like suicide, but he could not be

dissuaded. Already he was removing his outer clothing. In a minute, he stood arrayed only in his red flannel underclothes.

"Har, yu faller, put das cork yacket by me," he called to a man who held a life belt in his hand.

We hastily strapped the life belt about him and knotted a light line about his waist.

"Vel, gude-by yu fallers, har goes." With that he plunged into the ice-cold water. A huge breaker came rolling shoreward, he dived beneath it, came up on the other side buffeting the seething water, shunning the grinding pack, making his way steadily toward the distant dim object. The rope gave out. We tied on another piece. It too, was almost exhausted when the swimmer was still some yards distant from the ice-pan. There was no more rope, nor did we have time to return to the village for another.

"Quick," shouted Jean Ronceur, "every man catch hands."

We obeyed. Jean wound the rope end around his arm and plunged into the water. The next man followed, and the next, and the next. When all but two or three were shoulder deep in the water we saw John grasp the edge of the ice-pan and pull himself across it. Then came the strain upon the rope and upon the men who held it. We pulled steadily so that we might not break the rope. Gradually we regained the shore until each man again stood on firm ground. John lay on the ice-pan grasping its sides with his hands. The rope was taut as a bow string. Slowly and reluctantly the unwieldy raft swung toward the shore. It seemed a never-ending pull. Darkness was now fully upon us and we could only judge of our progress by the coil of rope lying at our feet. After what seemed an eternity, the raft came within the lea of the sandspit and we hauled it in hand over hand. It came out of the darkness and willing hands rushed in and seized it. They tore the frozen and helpless man from his moorings and carried him ashore.

The flare of a match showed us his face.

"It's Fred Calvert," someone exclaimed, "what could have brought him out on a day like this?"

John Swanson slipped off the ice-pan and waded ashore.

"Hallo fallers, yu still har?" he grinned.

The rescued man was speechless and inert. Two strong men shouldered him and started on a run for the town. It was nearly an hour before he opened his eyes and stared wildly about. He looked at me and whispered, "my wife."

"What is it, Fred?" I asked, bending down to catch his words.

He feebly clutched at my arm, "For God's sake, Doctor, go to my wife."

His wife. She was sixteen miles away in a lonely cabin on the shore of the lake. Sixteen miles through a blinding storm, the thermometer 30 degrees below zero. Then the gale seemed to bear to me the moan of a woman in pain. It seemed impossible to go, but then God gives it to men to accomplish the impossible. Pray that this may be one of the times.

"Boys, I'm going," I cried. "Who will go with me?"

"I will," shouted every man in the room.

I chose Jean Ronceur, the lean, tireless, sinewy French-Canadian. In half an hour, we were ready. The darkness swallowed us up as we faced that icy blast on our long journey around the curve of the lake.

Words cannot portray that night. As the dawn broke gray in the east, we staggered to the door of the little cabin. I pushed in and my ears caught the wail of a new-born babe. The room was dark and cold, the floor covered with drifted snow. "By gar, heet's one babby," exclaimed Jean Ronceur, relapsing into his French patois.

I turned the light of the lantern on the bed. A pair of pain-laden eyes met mine, a wan smile played about the mouth of a young woman.

I hurried to her side. "How are you, Mrs. Calvert?"

"I am better now. Where is Fred?" she asked anxiously.

It was useless to equivocate. "He met with an accident, but is all right now."

"God heard my prayer," she sighed and closed her eyes. "Oh such a night," she murmured dreamily, and sank into a deep slumber.

CHARLES STUART MOODY.

Menan, Idaho.

VITAL FORCES OF THE ORGANISM

Much has been written on this subject and much more, I suppose, could be written on it without exhausting the theme.

What I shall offer in this paper, is only my personal opinion and is given for what it is worth, as I am not able to prove my contention. I believe that God, the Creator of all things in Heaven and on earth, has placed in every organic body, both vegetable and animal, vital forces that are capable, under normal conditions, of preserving such an or-

ganism in a state of health during their allotted lease of life on earth.

What these vital forces are, where they reside and their manner of functioning I am not able to state. The natural defenses of the organism, I believe, are multitudinous and vary as much in kind and function as different diseases do.

I believe that each vital force is a separate and distinct entity and protects the organism against one disease only. For instance, the vital force that protects against smallpox would not protect against measles or any other disease. In other words, each separate disease meets in the organism its own special resistance. And just so long as the vital forces remain in a normal condition, the organism is immune from disease.

I believe that these vital forces are crippled or even destroyed in many different ways as, bad hygienic environments, excesses or deprivation of nutrition, mental depression and abnormal conditions in general. When these abnormalities occur and are not corrected, they become stabilized and are perpetuated by inheritance to future generations. They are then termed constitutional or inherited predisposing causes to certain diseases, according to circumstances, as tuberculosis, cancer, epilepsy, etc. When these diseases obtain independent of heredity they are said to be due to acquired causes. So all diseases are either acquired by some cause, or the predisposing cause is inherited. If a perfect equilibrium of the vital forces could be maintained through life, disease would be unknown.

Dalton, the physiologist, gives a suggestive hint along this line when he said: The seed germinates, grows, blossoms, bears fruit, withers and decays; the animal is born, nourished, brought to maturity, after which it retrogrades and dies.

In 1880, I met a man in Little Rock, Arkansas, a member of a wholesale grocery firm, of that city, who told me that he was 99 years old, that he had never been sick a day in his life and had never taken a dose of medicine. He also said that he could shoulder a sack of salt as quickly and with as much ease as any porter in his employment. Ninety-nine years of active life had failed to bend his erect and supple body, dim his visions or cloud his mind. I dare say that this man must have had many acquaintances of threescore and ten who had nothing on him even in his 99th year of life. I take it that all his organic functions had held at normal from birth to the time I knew him. I lost sight of this remarkable man the same year that I made his acquaintance; hence, I do not know how long he lived or when he died. I suspect, however, that he lived on until some unusual demand was made, on his vitality, that he could not meet. Then all of his functions, like so many members of a labor union, rebelled, laid down their tools, walked out on a strike and thus ended the battle of life for him.

When these natural defenses, through impairment, become inefficient to combat their enemies and disease thereby gains an entrance to the organism, artificial means must be resorted to in order to save the organism from death or invalidism. These remedies are many, such as drug medication, improved hygiene, massage, change of food and climate and even suggestion, all of which have a useful place in therapeutics.

Sometimes, insects and vermin carry disease from one organism to another and have to be destroyed or prevented by artificial means. Some years ago, the life of the sugar industry of the Hawaiian Islands was seriously menaced by the cane borers, but the importation of a little fly from a distance of several thousand miles proved the salvation of the mighty sugar industry of these Islands.

It is not always an easy matter to find a remedy to restore to health the natural defenses of the organism when they become weakened in their functions, but I do believe that there is a potent and sufficient remedy to combat every disease that the organism is subject to, whether known or unknown. I have said that I did not know the abiding place, in the organism, of the defensive forces; but I suspect that it is in the circulating fluids of the organism: the lymph and blood in the animal and the sap in the vegetable. I am not satisfied in my mind whether the vital forces of the body are of a physical character or mental. If the latter, they reside in the subjective mind that has to do with bodily functions and conditions, which I may discuss in another paper on mind and matter.

G. N. MURPHEY.

Paducah, Ky.

SURGICAL SEMINAR

[The subjoined letter referring to the Surgical Seminar, and more particularly to Doctor Blech's discussion of Surgical Problem No. 13, is a fair specimen of numerous appreciative commendations that have been received in this office. We are going to play a

joke on Blech by not showing him the letter but letting him see it first in print. Good boy, Blech! You see, you are appreciated. Keep up the good work.—Ed.]

—

I am a reader of Clinical Medicine and, as I do not know Dr. G. M. Blech's address, will you pat him on the back for me, for his discussion of Surgical Problem No. 13? That was grand, indeed! It brought out new ideas that we never get from the darned old textbooks. I sometimes think that I never read an author who had at heart the interest of the hard-working doctors, who are up against it almost every week with something similar to No. 13 and no place to go for help.

Tell Blech to come on with some more such cases if he wants to make an interesting journal. This case, to me, is worth five years' subscription to Clinical Medicine. I get so disgusted with the "highbrow" papers that take up a tired, busy man's time before he can get the meat out by separating the padding; to say nothing about weary eyes because of fine print.

For God's sake, give us a breezy, up-to-the-minute, wide-awake journal with large print. Give Blech my regards. S. G. M.

OUR FAVORITE METHODS

Here are some nice ways to stop loose or relaxed bowel tissue in the aged, causing too frequent action.

1.—Boiled milk with toast or zwiebach.

2.—Generous cheese and cracker diet.

3.—Warm coffee (not hot) with an egg beaten into it.

All these have done good work for the aged. Do not allow fresh fruit. If the patient is very fond of fruit, use dried fruit soaked in cold water, for twenty-four hours. Do not cook or sweeten with sugar.

Claire E. Armstrong.

Cincinnati, Ohio.

Rhus Poisoning

My one best bet: I have several good ones, but this is The One.

A solution of quinine sulphate for rhus poisoning. I have had more experience with ivy. To make a sure job, scrub with soap and water; dry; apply a solution of lead acetate and leave on three minutes. Wash off and dry. Then apply an alcoholic solution of quinine sulphate. An aqueous solution will do it, but I use the alcoholic. You can dispense this solution and tell your patients that they will get well. If you give enough, they will not have to return.

M. E. Bovee.

Port Huron, Mich.

TETANUS TREATED SUCCESSFULLY WITH LOBELIA

I have discovered a specific for tetanus. Out of ten cases treated, nine lived, and they were all extremely bad cases. The last patient, a Mr. Johnson, 50 years old, of large and fine physique, was taken January 10, 1924. When I was called to his home, I found him pale and with every evidence of intense pain which came in spasms, at frequent intervals. He begged me for a hypodermic of morphine. I dissolved two tablets containing respectively ¼ gr. morphine and 1/130 gr. atropine and injected the solution in his arm. Tried to get him to lie down on the couch. He made several attempts to do so, but a prone position seemed a signal for a spasmodic return of the pain, and he would bound up and beg for another injection.

I did not like to risk the further use of the drugs named, but told him that I could give him relief by another substance, which would be attended with no danger. I then injected 1 dram of lobelia, and, in less than five minutes, he was entirely relieved and completely relaxed. I continued to give him 1 dram of lobelia hypodermically every hour for three doses, and then 1 dram every 6 hours. I gave by mouth very small doses of carbolic acid in glycerin every five hours.

The patient recovered entirely and is now at work.

All ten patients were given the same treatment and they all got well but one.

I have treated a number of cases with serum and have seen several treated by other doctors with serum, and they all ended fatally.

G. M. Fisher.

Amaranth, Pa.

DENGUE

While dengue is described in the textbooks as a disease of the tropics, there is no question but that it is occasionally epidemic in the southern parts of the temperate zones, as is evidenced by such an epidemic in the southwest part of Texas, during the fall of 1923, and observed by me in both, San Antonio and in my own town of Fowlerton. The season

was an unusually wet one, with an average temperature of about 95° F.

The attack of the disease was sudden with high fever and headache. Pain in the bones and muscles usually appeared about the second day, but sometimes, probably due to error in diagnosis, as in my cases, this was deferred until the third or fourth day. There was an erythematous blush of the skin, with a rapid pulse and a temperature of from 103° to 105°.

The skin was hot, tongue coated and the distress of the stomach marked.

Two cases came under my notice and, as I saw them within a few hours after the invasion, I naturally commenced with a dose of calomel followed by a saline and the Burggravian classic treatment of fevers; namely, the aconitine, digitaline and strychnine routine, only recognizing the fever and headache. But, after twenty-four hours, and finding no change in the fever, I began to question more closely as to other symptoms and I then learned of the existence of muscular and deeper pains.

I now changed my treatment to quinine ferrocyanide every hour and, within the next twenty-four hours, I found my patients free from fever and practically convalescent. I added to my treatment iron arsenate and strychnine arsenate, in tonic doses, with the result that my patients were thoroughly cured at the end of one week, and there has been no relapse.

W. T. THACKERAY.

Fowlerton, Tex.

EXPERIENCE COUNTS

In college, we were instructed in the textbook diseases, some of which we clinically never saw, and in a few of the lesser forms of diseases.

As an example: Contagious diseases we saw only once a month during our senior year in college. Yet, when I started in practice, I thought I knew all about them. But, imagine my chagrin when I could not recognize a case of measles in an adult when I saw it, a brother practitioner telling me what it was.

In college, we were constantly under our tutors' eyes and, consequently, never depended on ourselves in an emergency.

A man in practice, especially in general practice, must depend on his own judgment and skill and must exercise his personal ingenuity in cases where outside assistance is not available.

I well remember the first case of placenta prævia I ever saw, either outside or in college. When I arrived at the home of the patient, the first thing I noticed was a large pool of blood under the bed. This was about my sixth confinement case. Well, I guess I did shiver in my boots, but I was the doctor and no help was available. So, I had to sail in and try to do what I could. I quickly had the patient under chloroform, dislodged the placenta, made an internal podalic version, extracted the child, gave the mother pituitrin and began to blow the breath of life into the child's lungs. After 15 minutes of backbreaking work, it began to breathe, which was boost number one for my spirits.

The mother survived the chloroform: Boost number two for my spirits.

She lived and actually got well: Boost number three. My! but I did pat myself on the back and many times sat in reverie recalling the facts.

But, what a sorry plight I was physically, spattered with blood from head to foot, though internally full of ardent spirit, not, however, of the Volstead variety.

Never again will I forget my lesson learned here and, often since, I had remarkable success in similar cases. Possibly purely luck.

Never shall I forget my first confinement case. In college, nurses always did the dirty work, but, when the baby was born in my first case, I inquired as to who would wash the baby. "Why you will wash it", the mother replied. Well, I looked at her, swallowed hard, and did next to the dirtiest thing I ever did in my life—wash a new-born baby.

I often laugh in recalling these instances.

Experience—a Great Teacher

When we leave college, we believe that we are doctors. At least, I thought so, and I believe that most of us have had that same egotistical idea.

The student of today gets much more practical work in his internship than we did ten years ago in college, and college courses are more clinical and less didactic than formerly.

However that may be, those of today have the same ideas that we had when we received our sheep skins.

Experience is our greatest instructor and we are never too old to learn. Can't we all remember when we began practice and, even now, questions arise, conditions present themselves that make us exclaim—if only we had some one to consult with, to clear the cobwebs from our brain!

I can well recall a young doctor, during his

first year practice after his year of internship, in a debate we had on one of those drifting cases that happened to come under our care on separate occasions. I told him the facts of the case, as I knew them to be, and the treatment as I thought it should be.

He disagreed with me and, in his superior, egotistical, 6 foot to my 5 foot 4 inches manner informed me that he knew all about medicine and would take no advice from any medical man. I replied, "Well, Doctor, that may be so, but I practiced medicine before you ever studied at it and am never too old to learn."

I can remember well how, as a young practitioner, I believed that, with my more modern and superior knowledge, the "old fogies" simply had to take a back seat. But, today, I know better and often tell my wife that, should I be seriously ill, I would prefer a certain doctor in our vicinity who is an old fogy with 35 years of practice to his credit.

I only too well know with what a lofty and superior mien I would take exception to my father's method of prescribing, knowing now that many of my pet cures are only an infringement on his system.

The question of drugs is a matter entirely of experience. When we leave college, we have only a smattering of their action. In the clinics, seldom did we see the patient a second time and, thus, knew nothing of the real effect of the prescriptions. When I left college, I thought I had to have on hand nearly all the drugs in the materia medica. In actual practice, these have dwindled to a very few and a few more for the unusual case.

I remember well how I had stocked up with almost every conceivable drug. Most of these I have since thrown away, retaining only the more essential ones. I used to think, my father's supply of drugs was too meager to even carry in a case. Now I know that he was correct. However, for a psychic effect on patients, I never have a vacant space in my medicine case, even though it may be filled with placeboes.

Yes, experience is the college we attend daily. Experience in presenting a business appearance in one's office, a personality in meeting your patients and in the sick room, experience in drug therapy, experience in a business capacity, experience in looking ahead for the future rainy day.

Later I may tell you of a few of my pet money makers in practice. Also how I collect 99.5% of my accounts where my brother practitioners collect 65 to 75%. Also how I invest my savings, to secure the future.

Dr. C. B. Reitz.

Palmerton, Pa.

[Doctor Reitz' vivid description of his practical experiences, which must supplement our theoretical college training, is interesting; and, no doubt, every one of us could duplicate these experiences or could contribute some of his own. For instance, I might sing a song of placenta prævia, of which I have seen only one case; but, that was enough. The baby died, the mother fortunately recovered.

The self-confident and cocksure attitude of the young graduate is a mighty good thing. The "green" doctor of medicine who is afraid on entering the practice of medicine has a terribly hard time. His more confident and self-assertive brother will succeed far better even though he, too, will have to take some mighty hard knocks. Experience takes it out of some of us most grievously. To others, she is a more gentle task-master, adding knowledge gradually and by easy stages.

Sometimes, I am sorry that the old preceptor system has gone out. I have learned my most impressive and most useful lessons through consultation and through other personal contact with my seniors in the medical profession. Textbook study never meant nearly as much to me—except, of course, to confirm the practical hints and lessons that I had received from other practitioners. After all, the personal teaching is vastly successful and I often think that it would be well if the preceptor system could be reestablished.—Ed.]

MEDICAL EDUCATION AND THE COUNTRY DOCTOR

Gentlemen, please allow me the floor for just a few minutes.

The discussions regarding the country doctor, which have appeared in several issues of Clinical Medicine, while all very good, seem to me not to have hit the vital spot. Having myself gone through the experience of a poor boy, getting a general education and then a medical training and practicing in the country afterward, I feel justified in giving at least some of my experiences, hoping that they may give some light on this topic.

Way down south in Old Mississippi's cotton-fields,
I bade farewell to the good old once-slave negro;
I was eighteen years of age then,
And that was twenty-four years ago.
I was a grown young man and as illiterate

as could be. I could hardly read or write. While supposedly in the fourth or fifth grade, I could not read the First Reader intelligently. Not one dollar did I have. I asked for bread on my way. But, I went to school and, before I was twenty-two years old, I had gained a first-grade license and was teaching school.

Then I entered a medical school, studied there for four years, and left with an M. D. attached to my name, wondering whether it really stood for Doctor of Medicine or whether I still was a Mule Driver. Anyway, I went back to my old haunts and hung out my shingle.

Some said that I couldn't be much of a doctor, for they had walked many a day by my side pulling the cords over "old Beck's back". Those that did condescend to call me to relieve their aches and pains, when relieved, would say, "Oh, he's a home boy and a good old scout", and would forget to pay me. Consequently, I actually was compelled to drive mules again to get money to go back and take postgraduate work. After that, I located in a small village and began to do better. However, many of the people only called me in case of absolute necessity, going to the larger towns with most of their ailments; they paid the city doctor cash and let my bills run indefinitely. Then, when I had serious cases and, needing help, called on my city brother, invariably (through his anxiety to build up a reputation) he would make it convenient (Oh, so very nicely!) to tell the patient how heroically he had saved lives out in isolated places like this, and it was a wonder more people didn't die.

On the other hand, if the consulting doctor would do what the family physician was not prepared to do; in other words, help his brother over the rough places and tell the patient to go back to his family physician, who could care for his need just as well as anybody could—the patient would still have a good impression of his family doctor and feel that he could trust his ailments with him and, if he needed help, he would always call on him. Under these circumstances, the country doctor would feel well disposed towards his city brother and would call for him when in need of help without any fear of his patient getting entirely out of his hands.

From the fact that, many times, the country doctor loses his patients, he is reluctant in calling on the town doctor for help when he really needs it.

From little things like those mentioned, the country people get to believing that it is a waste of time and money to go to the country doctor; that, in case of serious illness, the city doctor will have to be consulted anyway, and many a country patient is told (how wrongly! often) that the home "guy" was treating him for the wrong ailment.

In any case, the city doctor gets all the honor and money. For, the country people often owe their family doctor a year and even two and feel insulted if he asks for money. Still, they go to the town doctor, and him they pay cash.

The country doctor is not always a damn fool. So, he begins to investigate and finds that he knows just about as much as his city brother, only that he hasn't the equipment to do the work, and the general experience; the latter he can not get until he goes to a larger place. Therefore, through his desire for honor and a little of the money, he "pulls up", goes to town and lets the country gentlemen come to him there and pay well for the same services that he gave in the country for a song, furnishing his own tune.

On that account, I moved again and I do not blame my country brothers for doing the same.

I can not think that we are short of doctors but I do think that they will have to be treated differently by the rural people before they will be contented to stay in the rural district with them.

OLIVER B. BARRON.

Ferndale, Calif.

—

[Doctor Barron has touched upon a very important factor in the problem of the country doctor and even yet the question has not been exhausted. There are still further phases and aspects that, we hope, will come out in continued discussion.

Going back to his home, Doctor Barron had the experience that has been shared by many, very many,—not only physicians but others, too. So often it is true that "Verily, a prophet is not without honor save in his own country". A home boy, even one who has the right to tack the magic M. D. after his name, is still a home boy. The other chaps used to play with him, they went to the old swimming hole together, they played hookey together, they committed the same tricks and, in short, had the same experiences until he went away to school. They, having remained at home and having carefully refrained from widening their mental horizon, can not understand that his years of study and work have raised him above them intellectually; that the process of training to which he submitted entitles him to

adequate remuneration for professional work done. Very often, especially when the people in the country districts whence a certain doctor originated are particularly ignorant, it is best that he should serve the first years of his medical work elsewhere.

Fortunately, it also happens that the people who remained at home are intensely proud of the home boy who went to the big city and became a doctor and is now able to help them. Many times, they are staunch and loyal supporters and can soon be made to understand and realize the necessity of fair dealing in the matter of fees for services rendered. A little bit of jealousy may even then survive and little pin pricks may still be dealt out; but, as a whole, in the end the home boy who has become a doctor often has his strongest friends among his own folks.

Nevertheless, circumstances, which we can not discuss today have brought it about that it actually is better for a young doctor to settle not in small villages but in small country towns to which the country people come regularly on business. Residence "in town" conveys a degree of distinction in the minds of many people. It lessens the too intimate familiarity and makes it possible for the doctor to employ business methods in charging and collecting.

The honesty and the dishonesty of consultants who are called out from the city form another chapter of the question which may be taken up on some future occasion.—Ed.]

MEDICAL PROPAGANDA

Little knowledge is dangerous, but no knowledge is deadly and fatal, especially when it concerns such important matters as medical and public-health questions.

I have arrived at this conclusion since I was thrown in closer contact with the urban population, in whose superior knowledge of subjects medical over that of country folks I had so firmly believed. When I moved to the city, I was sure that I would be free from the many difficulties I had encountered in my country practice. What these difficulties were, is needless for me to enumerate. Every country practitioner has to cope with them every time he attempts to treat his patients scientifically and in accordance with the latest and modern medical procedures. I am loath to admit (but open confession is good for the soul), that even death which could be avoided resulted as a consequence of the provincialism and narrow-minded stubborness of the country folks. It was not so very long ago, that I lost two beautiful children, simply because I could not get the consent of the parents to immunize them against diphtheria to which they had been exposed. No arguments on my side availed, and even the kind intervention of the priest, whose aid I solicited in this matter, met with failure. Two weeks after this stormy "conference", the family needed the services of the same priest whose advice they had so flatly rejected. Ignorance in this case cost the life of two children, and similar victims could be counted by the thousands, in the city as well as in the country. For, in truth, there is just as much clinging to superstitious traditions of the good old days among the city dwellers as there is among the country gentry, and the only uptodateness among the urban citizens is found in the choice of wearing apparel and in the latest fox-trot steps.

—

Wherein lies the fault and who is responsible for this awful condition? I asked myself and others scores of times and I discovered only one reason: Lack of propaganda on the part of the medical fraternity. Propaganda of the kind that would acquaint the general public with our aims and purposes, with the whys and wherefores of our procedures. We must disseminate knowledge of this kind arduously, continuously, repeatedly, and in a manner that it is accessible to the laity, through the only source where the people draw their spiritual food from—*through the daily newspapers.*

The health columns conducted in the dailies, by such men as Evans, Bradley, Copeland, while marking a step in the right direction of medical propaganda, are not sufficient to pierce through the cloud of darkness, for the reasons that these articles deal mainly with the description of disease phenomena and fail to discuss in a simplified manner the medical art—the weapon against these diseases. It is on this ground, the ground of opposition to the medical measures on the part of the public, that the physician meets his Waterloo.

—

A certain amount of superficial knowledge about disease is disseminated by the enemies of regular scientific medicine—the patent medicine interests and the various medical cults, such as the chiropractors, naprapaths, naturopaths and the various other "path"etic groups.

In fact, all the various agencies of fraudulent therepeusis make excellent use of the published descriptions of disease as prepared by our leading men. They are too ignorant to

prepare this material themselves, but they begin where we end, namely, they immediately proceed to supplement their erroneous and fraudulent philosophies of treatment, instilling such weird and false conceptions about the treatment and cure of disease, that they leave the public in a poorly receptive state of mind for the admonitions, instructions and advice given to them by the regular physician.

Our competitors, who thrive upon the ignorance of the general public, have long ago realized the fact that the public mind is a *tabula rasa*, a clean sheet of paper, upon which you can inscribe anything and everything, and they certainly do make use of this knowledge of the public's psychology. They know that the public is credulous and gullible, it has respect for the printed word. So, they feed the public with their pseudo-science of the human ailments and their treatment to such an extent that its parallel can only be found in the war-time German or British propaganda. Every weekly or monthly publication carries their paid and unpaid (?) ads. Even the dailies are full of their propaganda stuff.

—

The question arises, what are we regular physicians going to do about it? How are we to combat this flood of misrepresentation and false conceptions? Shall we be chained like Prometheus to our ethical standards and allow the public mind to be poisoned by the deliberate lies of a well organized gang of quacks and fakirs?

While I concede that it is wrong and unethical for the individual physician to advertise in so brazen a fashion as does the chiropractor or the naprapath, yet I can not see wherein there would be a breach of medical ethics if an organized medical body would use the same methods for the purpose of acquainting the general public with the virtues of the various medical procedures, performing thus a double service, first for the patient by informing him about the advances in medicine, secondly for the doctor, making it easier for him to make use of these advances.

Let us take for an example the Schick test and the Schick method of immunization against diphtheria. How many people of every 100 average men and women, do you suppose, ever heard about it? If you ever happen to mention the word "Schick," they immediately think of the Sheik of Araby. [If they know French and do not pronounce it like "cheek", they might think of that undefinable *chic*.—Ed.] How many, do you think, will allow their family physician to protect their children against diphtheria by this method?

How far different it would be if the A. M. A., for instance, would buy a one-page space in every daily newspaper and, in bold type and lucid style, tell the readers just what the Schick test is and what its value is as a protective measure against the terrible disease, diphtheria!

Here is another example: The A. M. A. conducts a very vigorous campaign against the nostrum and patent-medicine evil. Week after week, exposures are made of these valueless drug mixtures. It is done in the A. M. A. Journal. But, does the general public read THE JOURNAL? Certainly not! It continues to buy patent medicine, just the same. The criticism and the exposure of fraud, as done by the Journal, does not reach the laity, while the daily newspapers freely advertise and laud (for a good price, of course) the very same nostrum that the A. M. A. Journal condemns! To appeal to the conscience of the publishers and secure their refusal of these well-paying ads, is futile. They have to sell their advertising space for coin and they sell it to the only bidder. For the same financial consideration, they would print the exposures and the criticism of the A. M. A.

—

The foregoing two examples, showing both, the positive and the negative phase of what medical propaganda can do, are sufficient, I believe, to clarify the purpose of this paper. My plea is to the medical profession to descend from its seat of aloofness, break the chains of a false conception of ethics and become a Prometheus unchained in its fight against a pernicious propaganda carried on by its sinister foes. Let us counteract this evil by the same method of disseminating a wider and a truer knowledge of the things essential for the good and welfare of the general public. Let us give the laity a clear view upon our aims and purposes, of our means and methods which the medical profession has worked out for the relief of physical suffering and for the prolonging of life.

Moreover, it is time to make the public acquainted with the doctor himself and dispel the absurd attitude of the people towards the doctor.

What peculiar notions the people do have about a doctor!

To some, he is a plaster of Paris saint, who lives on God's free air, who is never in need of money, whose bills are always paid up or who never incurs any bills. That is the reason why the payment of the doctor's bill is always

deferred to the last or never made at all. To others the doctor is a cruel parasite, who waxeth fat on the misfortune of his fellow men and whose only occupation is the offering of prayers to the Almighty for more sickness and accidents.

These erroneous ideas about the doctor would soon disappear, however, if a truer picture of the doctor's life, his labors and struggles, could be thrown upon the screen of the people's consciousness. To do this, we need a powerful projector and, as such, only organized medical propaganda can serve.

B. W. ABRAMSON.

Columbus, O.

—

[During the last few years, especially for the last year, several new departures in legitimate medical propaganda have been taken which, so far, have accomplished a measurable amount of good. The American Medical Association is publishing a popular medical journal, *Hygeia,* in which medical problems are elucidated in popular language. Several other journals are being published for the same purpose and with the same aims. Then, other agencies have become active, among the several state medical societies, through which newspaper articles are prepared and published, lectures are given and lay societies are addressed on matters affecting the public and individual health. We believe that the ball has been set rolling and that the future will bring results. We might think of paid newspaper advertising, as suggested by Doctor Abramson, or of broadcasting information on medical matters, as is done, for the sake of advertising by chiropractors. New ways will, no doubt, be opened up. We feel confident of what the future will bring.—ED.]

THE COLORADO CLIMATE

I have been reading THE ALKALOIDAL CLINIC and CLINICAL MEDICINE for twenty-five years. Twenty-five years ago, in June, I graduated from the Buffalo University with the class of 1898, having previously graduated from the University of Rochester (Arts and Science course).

The first thing I did after graduating was, to get married. Probably it would have been better to have remained single for a year. I do not know. We lived in several places in Pennsylvania and New York for nineteen years. We then had five children. A son died in 1915, of empyema. Two years later, our eldest daughter was taken with a fulminating type of tuberculosis. We immediately started for the Rocky Mountains in hope of saving her life. We remained in Denver for a few weeks and then crossed the divide, to this town. But, her case being the fulminating miliary type, she passing away after sixteen months' suffering.

July 2, 1919, I purchased a drug store at this place and have been able to make ends meet.

Young Dairy Stock.

As this is a primitive country, on the line of the Moffatt R. R. and not thickly settled, practise has not been as large as in the East. However, I have learned a few things since coming to Routt Co. about which I might enlighten our eastern friends who do not know what to tell patients when they ask regarding the climate of the Rockies. I will go down the list of diseases which are the most common and compare their clinical aspects here and in the lower altitudes.

Large Lettuce Field.

Typhoid fever is very rare. I have about one case a year, while in the East I would have one or two dozen. Generally, in the East, I would find the source of infection, but here I have never been able to trace the source. I have just closed a case of a boy 16 years old. The fever ran a regular course and terminated in exactly twenty-one days. My treatment all through was castor oil when necessary, tepid water and alcohol baths for

fever and a little fl. Extract of Echinacea whenever 102 F. My sheet anchor was, and always is, one or two of "Intestinal Antiseptics" every two hours, when awake. There were no complication in this case nor in most of the other cases.

Now, as to why we have so little typhoid: everybody drinks water from the creeks and rivers that rise in the Flat tops where there is perpetual snow, and no one lives there at the source; there are few ranches on the course of the streams. I had that family bury the excretions in a five-foot hole after treating them with carbolic acid.

Next, we will take cholera infantum. We never have any cases of cholera infantum here, while, in New York, I would have a dozen or more every summer and a large percent of deaths. The reason for this is, that the nights are cool even if the day should be hot. I always believed, when in New York, that the humidity of the air from July till October was the cause of cholera infantum. We do not have that humidity nor the hot nights. So, I tell my people that this is the best country in the world to raise children in.

Lettuce Shed.

Now as to tuberculosis. I have heard it said by some that people are as safe from tuberculosis in one place as another and that, by proper rest and fresh air and diet, one can be cured in New York and any other where in the East. I would like to say to those who make those statements that I have been here between six and seven years and have not seen or heard of a case of tuberculosis originating in this vicinity. All have been imported. But, while I was in New York and Pennsylvania, in the vicinity of Loomis Sanatorium, for 19 years, I always had cases of tuberculosis in all stages under my care, that had originated there. I can not say that this air cures many bad cases. I have heard of some cures, but the facts that I have mentioned prove to me conclusively that this air is a preventive of tuberculosis. Dr. Blackmer, our registrar, of vital statistics at the county seat, at Steamboat Springs, informs me that he has no record of any such cases in the past.

As to influenza and pneumonia, I would say that, contrary to the popular idea that this altitude of between seven and eight thousand feet is especially fatal to those diseases, I have ample proof that this is the best altitude to have those diseases in. Out of about 400 cases, in 1920, only one patient died after the crisis of pneumonia had passed. He died from erosion of a blood vessel causing violent hemorrhage. My treatment in almost all cases has been calcidin and calcium sulphide in usual doses. In addition, I use strychnine or any other drug, as may seem necessary. During the epidemic of "Flu", several people from this place were taken with that disease while in Denver, about one-half mile lower than here, and most of them were cared for in the end by the undertaker. Now, this difference is either due to the treatment or to this fine mountain air. I give credit to both.

I think that I have given ample proof that an altitude of from five to eight thousand feet is advantageous to respiratory diseases if it is combined with dry pure air and the sunlight of Colorado.

Now, as to the industries here, I will enclose some pictures of them. We have a magnificient lettuce industry which bids fair to excel any in the United States. Last year, we shipped from our station 250 carloads to all parts of the country. We also have a year-round butter-fat trade which is no small business. We raise the largest and sweetest peas to be found anywhere. When the Moffatt tunnel is completed, vegetables and dairy products can reach Denver in six hours. Next, we have more coal in Routt and Moffatt counties than there is in Pennsylvania, both anthracite and bituminous.

Further, since starting this article, I have learned that the Texas Oil Company has brought in a 3600-barrel oil well on Hamilton Dome, about thirty-five miles from here. About three years ago, about twenty miles away in the same section, three gas and oil wells were opened with great gas pressure.

J. C. Male.

Yampa, Colo.

—

[Doctor Male evidently is sold on the Colorado climate, stressing especially the high altitude. No doubt, "there is a reason". If you live a mile or more up in the air, there simply can not be many people above you, contaminating the soil and the waterways. The intense

sunlight is actively germicidal. So, the good doctor is quite right in praising his part of the country as a good place of residence for people affected with diseases of the respiratory organs.—ED.]

MEDICAL PRACTICE IN THE WEST

The question of the general practician has been discussed freely and, while it is a live and interesting and pressing one in the east, it is not so alive here in the west, for our smaller towns are fully supplied with good men. It is with another phase of the question that we will take up some little space in your always valuable and valued journal. This has to do with the environment of the country as we find it in the west and with the remuneration possible to the man who will fit himself for his environment. There are many ways to add to one's income and I have always found that effort directed to developing office practice is well spent, the outlay being inconsiderable when compared with the results.

People will pay for thorough work even in country practice. They appreciate the interest taken in themselves and their little physical complaints. If the physical break is more serious, an early diagnosis is also appreciated. More often than not, they are easily persuaded to submit to proper treatment if the effort of diagnosis is rightly presented.

I have practiced in the west for twenty-five years in small towns, and find the fees to be much greater than anywhere in the east or south. The people (ranchers) are used to higher fees and pay them without discussion. Even those who come from Missouri pay these fees promptly, while instancing the difference, especially for operations. One's cash income ranges from a minimum of $3,000 to almost any reasonable figure, up to $10,000, if one develops a surgical practice, which is always a possibility. And this in towns of 500 with an agricultural country and people round about, not exceeding 2,000 inhabitants in the aggregate. While there are few epidemics, and the general health of the people is good, there is always something doing and cash collections have a way of coming in with little effort on the part of the collector, who should be the doctor himself. Collections average 90% in all parts of the west. It is simply a question of a little system in presenting bills regularly. Night work may be held within bounds by a firm attitude against it and by a well advertised increased fee, usually double the day fee. I do not mean that we must refuse night calls. There are many emergencies which must be attended to, certainly. But, I have found that many night visits are not necessary, and people realize this if one uses judgment in prescribing proper treatment, insisting on day calls in all serious cases and educating our clients in the necessity of a little consideration for the doctor if consideration for their needs is expected in return. They will meet us half way.

Roads are improving and are generally good in most of the Rocky Mountain States. At this altitude, it is possible to use an auto the year round. Denver is a mile high, and this country is over 7,000 feet. The summers are delightful and the winters, while cold (the thermometer dropping to 15 below zero, sometimes), are very invigorating and healthful. The scenery in Colorado is built on the grand scale, with mountain ranges reaching an elevation of over 13,000 feet and many peaks rising to over 14,000 feet. They are beautiful

at all seasons, well wooded to timberline, with many streams well stocked with trout, native and eastern brook, arising from their snow-filled canyons. Colorado is the tourist state and, in seeing America first, it is the state which most repays the discerning visitor. One sees Majesty, Sublimity, Grandeur on all sides. The environment is exceptional in all sections of Colorado.

This is part of the good-will which one gets with any practice located anywhere in the state. It is an ever-present and inspiring delight. It is part of the compensation one collects.

Moonlight on Main St.

The people provide their own amusements in these small towns. There is usually a movie theater and a dance hall with local or obtainable orchestra. There is the highschool and this is often the community center, as it should be. Debates, local entertainments, community literary affairs, parent-teacher associations, gymnasium games, church meetings and the ordinary social gatherings fill the yearly round of pleasure, with frequently the doctor taking the lead or delegating the honor to his life-mate. Both may find it profitable to lead or to assist, one in a certain line of endeavor, the other in a different line. There are many advantages in doing this. It tends to make one contented with the environment, which one makes to his own liking in many ways. Influence which can be turned to community betterment is developed. Service, in which lies happiness, pays also financially.

These are some of the things we have no time for while engaged in city practice. While association with one's fellows is of the greatest advantage theoretically, there are compensations in country practice not to be attained by our city brother. One is thrown on one's own resources more, there is less friction, a closer bond between our patients and ourselves, and, in a material way, expenses are less, savings more—or they should be. One can always get away for a vacation of a week or month, with the help of a *locum tenens*. This is a modern institution well worth cultivating.

True, there are hardships in a country practice which try one's soul and one's physical strength. And the time comes when this is too much for the strongest and one must give way for the younger man. Well for us when we recognize in time that the grind is growing too heavy.

I have tried city practice, have gone back to the country with pleasure and some profit, to return again when the urge was too great to withstand, and really believe that the young man does the right and the proper thing for his future well-being, when he essays a beginning in country or small-town practice and develops strength of character and a well-rounded knowledge of the little things which go to make up the successful practice of the medical man. To be a good mixer, is essential; to be able to love his work with all its petty worries and cease to think of them as worries, to enjoy outdoor life and take things as they come with a smile, as part of the day's work, that leaves a pleasant taste in the mouth, and the memory of the days spent in general practice in the country—all this is a source of delight for years to come. One develops poise and character and serenity. One becomes a philosopher and his philosophy carries him on into the sere and yellow—when that state of mind arrives—with a calm and equable contentment to be admired in all men.

I know Montana, Idaho, Utah and Colorado pretty well and think there are many locations where a young man or an older one for that matter may do well, and have a not too hard life of it. Once I practiced in the city of Schenectady, N. Y., and talked to many of the young men who were making a short living in city practice. The fees in the east are too small. I made many trips of over a mile for a dollar, and obstetric cases brought an average of twenty dollars. I was back there in 1919, and these young men were making a good living and seemed to be satisfied, and they should be if making a living is all there is to life. I never had cared for much money. It is always ready to fly when I do get it. But I have seen much and had some pleasure and some experiences and still feel young enough to start anywhere and make a go of it. There has never been any difficulty making good money in the east or the west, but it is easier to make money in practice in the west, and one does not have to work himself to death doing it. Fees are so much better and living expenses lighter, I think.

Hardships there are in country practice, although I have never had more than could be borne easily. City practice has given me more real distress than came my way in country practice. I do not mean in the matter of making money, either. But one has compe-

The Monument—Erected by the citizens of Transylvania County, N. C., in memory of their soldiers of the World War and to mark the Eastern Entrance of the great Pisgah National Forest and Game Preserve. The monument is four miles from the beautiful town of Brevard, N. C., and twenty miles from Mount Pisgah.
This picture was sent in by Dr. Chas. W. Hunt, of Brevard, North Carolina.

tition which begets envy and detraction and worry, which one escapes largely in country practice.

If ever you want to see real country, come to Colorado! One needs an auto to see all the glories of the State and must spend at least a month. I enclose a few snaps of the mountains near us. In fact, the Sangre de Cristo range is the finest example of its kind in the U. S. The elevation is 14,000 feet, this valley 7,800, and yet we use the auto all the year. The lake snap is of one of the beautiful little lakes lying in the heart of the range, well stocked with trout and easily reached from Westcliffe. R. J. SMITH.

Westcliffe, Colo.

[Doctor Smith paints an attractive picture of medical practice in the west, more especially in Colorado. What he says concerning the extra-medical, social, activities of the medical practitioner is, incidentally, very interesting in connection with Doctor Richardson's communications. At any rate, we believe that Doctor Smith's letter may readily persuade a number of young graduates to go west for their first years of practice. They could hardly do better.—ED.]

TREATMENT OF ACNE VULGARIS*

When seeing out-patients at Guy's, many years ago, a woman, aged about 35, presented herself, with the chest and upper part of the abdomen covered with acne for the most part in a suppurative condition. She had suffered from it before, and her skin was disfigured with a perfect lacework of keloid scars, as a consequence.

At that time, Ringer's suggestion of calcium sulphide as a cure in certain suppurative conditions was before the profession, so I ordered her the drug; no external application was given.

In three weeks, she returned, perfectly well, save only for the permanent keloid lacework. Some time later, she had a slight return of the same malady. The same treatment was ordered; and, as I saw her no more, I assume that she remained free of her acne.

C. H. GOLDING-BIRD,
Senior Consulting Surgeon to Guy's Hospital.

London, England.

*Copied from *British Medical Journal*, Feb. 2, 1924.

THE "ATHALETIC" ITCH

The time was when our little home
  Was a Heaven on earth—but which
Now seems more like "the other place"
  Since Bill brought home the itch.

Bill's captain in the foot-ball team,
  In the ball-nine he is "pitch";
So it isn't strange that *he* got
  That "athaletic" itch.

It's proper, too, that name is,
  Considering its proclivity
To stir up in a person
  So much physical activity.

Sounds innocent, too, *athletic*
Ah, that was just the hitch
For, otherwise, we'd have recognized
'Twas the plain, *oldfashioned,* ITCH.

And so we allowed ourselves to sleep
The sleep of false security,
Believing Bill, as always, the
Superlative of purity.
The preacher stayed with us one night
And Bill, the generous boy,
Gave up his bed to the good man
And wished him every joy!
Alas, since then, the minister's changed,
We see it plain, at service,
His poise and calm repose is gone,
He's getting kind of nervous,
Always the mildest of men, before,
E'en in denunciation,
His sermon fumes with sulphur, now,
And hell-fire and damnation.

At *our* home scenes are wholly changed
From the peaceful days of yore,
When quiet reigned, save for the sound,
Of Grand-pa's gentle snore.
And dear old Grand-ma—how she's changed!
Since the times when she knitted or read
As she sat by the fire-place, with Grand-pa
For the hours before going to bed.
Now, both look around surreptitious
Here and there as they twist and catch
A hold of the skin on the short-ribs
Or elsewhere and give it a scratch.

And Bill, and Laura, and Jane, and John
And dear little Betty Lou
And Mother and Molly, the hired girl
Are, all of them, doing it too!
And ME! Well I hate to tell it, but,
When old Doctor Reid came in
I was scratching my back on the door-jamb
And likewise massaging a shin
With bass-viol rasps, *obligato*
The difficult harmonies matching
I was using both hands and feet, AND YET
I was twelve hours behind in my scratching!!

—

This will likely be looked upon as rather a superlative case, but we have had an awful epidemic in this country I have treated all my cases with the following prescription, which same I have used with absolute success for the last twenty-five years

℞

Plumbi protoxidi	3 oz.
Aceti	2 oz.
Mix and evaporate to	1 oz.
Then add	
Oxidi rubri hydrargyri Ammoniae chloridi	aa 20 grs.
Mix, add	
Olei olivae	3 oz.

Misce. Sig. Use feather to paint on lightly once daily, before going to bed, and after full bath in warm water with soap. Change bed-linen and underwear each morning.

Greeley, Colo. J. A. DUNGAN.

[*Concluded from page 252*]

I have talked a good deal more than I intended to do, but I have been in splendid company and that inspires.

I am proud of you, brothers Acheson, Junger and Savitt!

Problem No. 16

As long as we are on the subject bordering between gynecology and surgery, I beg to submit a rather purely gynecologic case.

A young woman, aged 26, married, always in good health, missed her menstruation three times. As she had some slight morning sickness, she believed herself pregnant. In the last few weeks, she had felt in excellent condition. Her family physician had confirmed her suspicion that she was pregnant, and this fact caused her much happiness.

Suddenly, in the midst of profound sleep, she was awakened by an excruciating pain in her lower abdomen. Her family physician gave her a hypodermic of ¼ grain of morphine and, a few seconds later, she was free from all pain and very comfortable.

On rising the next morning, she yelled to her husband that she was "losing her insides," that the pain in her left lower abdomen was as sharp as it had been during the night.

Her family physician was again summoned and, now finding that she had tenderness on pressure over the entire abdomen, a rise of temperature, fast pulse (130), nausea and vomiting, diagnosed a perforated appendix and demanded consultation.

When the writer saw the patient, about an hour later, he noted with some satisfaction two things: first, the patient did not present an appearance characteristic of acute septic peritonitis, and, second, the perforation of the appendix was rather mythical, since the patient was restless, complaining of pulling pains in her lower abdomen and asserting generally to be in great pain. She vomited once in our presence, but this produced no relief.

Physical examination confirmed the data given in the history, but it was noted that the abdomen was most sensitive in the left flank.

Rectal examination revealed something elastic and tense. Examination of the vagina was next undertaken with a gloved hand, and showed a uterus apparently four months pregnant. Laterally, to the left and below the uterus, was felt a round soft mass, which could not be palpated satisfactorily, but which had all the characteristics of a cystic growth of about the size of an orange. I insisted on operation, which was accepted.

Required: Preoperative diagnosis.

Let Us Play

Conducted by All of Us

Let Us Play

PLAYTIME does not come but once a year —fortunately. If it did, our nerves would be worn so ragged, by the time vacation comes, that even a whole month would not suffice to "re-create" us sufficiently to come back to work. It was a wise provision that set one day out of seven apart for rest, but it was unfortunate that this seventh day was mistakenly made a time to be "kept holy" in strict formality, that is to say, devoted entirely to temple worship. Surely, the pursuit of innocent pleasure, while refraining from gainful occupation or from strenuous labor, is a proper manner for spending at least a portion of that seventh day. Walks in the open, even playing ball (whether base, hand or golf does not matter as long as it is not contaminated by bets for money), or indulging in some hobby—all these things help toward re-creation, they aid in resting body and mind, in making the best of our ability for service. That, we opine, is also a form of worship.

It is impossible for anybody, especially for a brain worker, to be occupied with his special absorbing task uninterruptedly, day after day, week after week, month after month, without any let-up, without any change of occupation. Eleven months out of the year, granting one month for vacation, would be a proportion that would lack balance. As a matter of self defense, we should let down at least one day out of seven. Still better it would be to reserve for ourselves one hour. or anyway half an hour, out of each twenty-four that we might devote to something apart from our regular work.

This is where hobbies come in beautifully. These hobbies may satisfy our acquisitive tendencies and may take the form of collections of whatever nature—stamps, coins, etchings, or what not. They may take numerous other directions. For instance, Dr. M. E. Bovee, whose letter on winter recreation appears on another page of this issue of CLINICAL MEDICINE, says that "a lot of physicians are pigeon fanciers and take great pride in that kind of work for recreation. Some are dog breeders and get a lot of recreation out of that. Their pet dog may be Bull, Police or Airedale. Then, some raise mice and some have a farm they use for the same purpose. Others take their pleasure in the study of Geology, Botany, Astronomy, etc. There is a large field to cover and, if we could get articles from men who have made a special study of each one of these, it would make mighty fine reading and, incidentally, change some of our preconceived notions." He continues:

"Personally, I had been thinking of buying a farm to do a little of this work on. Doctor Bryce's article in this month's Journal has made me pause, and I am going to think it over very seriously before going into it. Lorand, author of 'Old Age Deferred', 'Life Shortening Habits', etc., says that, if he had had his money in land, he would be rich today instead of very poor as he is."

All this is quite true and everything pertaining to these various pursuits has a place in the "Let Us Play" department. This department is not limited to discussions of vacation trips, of socials, etc. It is devoted to everything that interests the doctor outside of his strictly professional pursuits.

WINTER RECREATION

Are you getting along in years and is the stress of a large practice beginning to wear upon you, are the long and cold winters becoming a dread, and the long and weary hours, spent at night trying to subdue a bucking fetus, becoming irksome? Do you long to spend some time (while the snow and Jack Frost play tag with one another) where the sun always shines, the mosquitoes puncture your integument, making you think of the good old days in spring, and where the odoriferous aroma of the sweet magnolia is wafted to your nostrils?

Then, brother, pack your turkey, fill your pockets with a good supply of stuff stamped

with the good old U. S. A. markings, your bill books with a sufficiency of traveler's checks, arrange with your banker, so that you can wire for more at any time, and hie yourself to the station, boarding the Royal Palm train for sunny Florida.

Getting Atlantic Breezes at St. Augustine

Getting off at Jacksonville, you will begin your sight-seeing. Go to the park and see the different animals that are inhabitants of that state. Gaze upon the alligator that is 206 years of age, and, taking the boat, make a trip to Dr. Derck's orange grove. Size up the hanging Spanish moss. Take in the Ostrich Farm. And, don't forget to believe everything the guide tells you.

Take the bus, the next day or week, as you see fit, for St. Augustine. Here you will see one of the most interesting places in the good old U. S. A. It is the oldest town in the country, has the oldest house in the country and the oldest post office. Also the narrowest street, six foot wide. The old slave market is of interest, and you will be attracted by the games of quoit pitching that are always in progress. There is the old Spanish fort which is over 400 years old, with its dungeon where prisoners were smothered to death in four hours from lack of oxygen, and where racks for torture were used. On the outside, actual bullet marks in the walls where prisoners were killed at sunrise. The Fountain of Youth that Ponce De Leon discovered, in 1516, you will be interested in. Regale your stomach with the Radioactive waters that Ponce drank 400 years before. Don't forget to go out and hear the band that plays every night.

Having My Picture Taken on One of the Beautiful Streets at Palm Beach

Board the train for Daytona Beach and watch the bathing beauties as they cavort in the surf. Look over the world's best auto speedway where all the records have been broken.

Rear View of the Home of William Jennings Bryan at Miami

Jump from there to Palm Beach. Look over the beauties there, not forgetting to hear the million-dollar band. If you are so inclined, count up the millions of dollars spent on homes and grounds there. I would fain give you a little advice, brother; do not spend too much time there or you will sure have to wire the banker for more money.

At Miami, you will be more at home, for it is a northern city in the south. Miami is beautiful. Go out and see the home of William Jennings Bryan, the Seminole Indians, and Alligator Joe. Don't forget to visit the

beach and the aquarium. The latter is one of the best, if not the best in the country.

See Lakeland with all its beautiful orange groves, and don't forget to have a picture taken in one of them. But, say, don't neglect to take your overcoat off. Oranges and overcoats do not go well together.

Shell Mound at St. Petersburg—Supposed to Be an Indian Cemetery

Then, see St. Petersburg, The City of Sunshine. Every day that the sun does not shine, the papers are given away free. That sight is very rare, however. This is the city of opportunity. After you have seen this and all the places of interest around there, you will have seen all that is of great interest in Florida, unless you would care to see the Everglades.

The Everglade trip is very nice if you care for the monotony. When you have seen it all and spent your money, you will return with renewed vigor and feeling like striking in again at the old work of inveigling the almighty dollar. Especially so, if you have carried a bottle of the water from the Fountain of Youth with you and imbibed freely thereof.

M. E. Bovee.

Port Huron, Michigan.

VACATION IN ALASKA

Spring is certainly on the way, in Alaska. No frost in the ground, no snow except on the mountains, the pussy willows out and the first robins appearing at least a month ahead of time. This reminds me that all good doctors should begin thinking of their vacations, and, where else is it possible to have a vacation as one may have it in Alaska?

I am tempted to write you the facts concerning an incident that may be of use in further confusing and confounding the Anti-Smokers' League. While on a hunting trip, last fall, I was called one night to see an Indian woman about two hours distant by row boat. No history was obtainable other than that she had "strong belly sick". Arriving, I found a husky young squaw rolling on the floor in evident agony and learned that she had been confined three days previously. Considerable distention over the pubes indicated the trouble, verified when I learned after the use of some good, old-fashioned English that she had not urinated since the baby was born. Careful search of the shack failed to reveal anything that could be used to relieve her, and my pocket case contained no antiseptic but tincture of iodine. As a last resort, I poured the kerosene from the lantern we had brought with us into a cup and, with considerable distaste, the ivory cigarette holder my wife had given me on my last birthday was sterilized and sacrificed as a catheter on the altar of motherhood. The profound relief and gratitude expressed by the prolonged "O-O-O-O-O Doctor," was my ample reward.

About your proposed New Department, featuring life as viewed by the doctor on leave, and containing recreational topics, I should think that there is a field for it. At least, it would interest me. I find no difficulty in keeping fed up on high-power stuff that gives me nothing tangible but a headache. It would be a relief to know that the science of medicine and the art of living are not, necessarily, incompatible.

Alaska.

VISIONS AND TASKS

The man with a vision and never a task,
Is only a dreamer, with Life but a mask;
While one with a task and no vision in sight,
Is only a drudger from morning till night.

The man who is willing to do what he may
To brighten Life's journey, will have for his pay
The knowledge within, that he's trying his best
To fulfill his duty, God doing the rest.

Be it ever so humble, there's nothing too small,
To help out the plan of the Ruler of All;
Do the little things promptly, that come in our way,
To fill up the measure of Life, day by day.

The strands of Life's rope, and the links of Fate's chain,
Are fashioned and welded again and again;
The task of tomorrow will easier be,
By following after the vision we see.

The task and the vision should hand in hand go,
So, work all together, and then we will know
How the measure of living will averaged be,
When rewards of accomplishment find you and me.

Homer Clark Bennett.

Lima, Ohio.

What Others are Doing

MEDICINAL TREATMENT OF CHOLECYSTITIS

Under the title of "Cholecystitis and Gall-stones in the Light of Recent Research," Arthur F. Hurst (*Practitioner,* November, 1923) gives a splendid review of the origin, clinical manifestations and treatment of cholecystistis and of cholelithiasis. Among the useful diagnostic factors, he mentions that gall-bladder disease may be differentiated from duodenal ulcer because of the facts that, in the latter, hyperchlorhydria is almost constant, while, in the former, complete or almost complete achlorhydria is frequent. The presence of occult blood in the stools points to duodenal ulcer.

The bile and duodenal contents are obtained for examination by means of duodenal catheterization in which Meltzer's method of injecting a quantity of magnesium sulphate in concentrated solution is followed. The details, both as regards etiology and diagnosis, must be read in the original.

As for the treatment, Doctor Hurst asserts that it is now possible to recognize gall-bladder disease early in many cases in which it is still amenable to medical treatment and he believes that biliary infections are amenable to medical treatment under favorable conditions—as much so as those of the urinary passages.

"Even crystals of cholesterol deposited on the walls of the gall-bladder or minute agglomerations of crystals (the basis of what may later become gall-stones) can be redissolved by the bile, if it contains any excess of bile salts over the quantity required to hold the cholesterol it already contains. Moreover, frequent thorough evacuation of the gall-bladder may lead to the removal of such agglomerations, whilst they are still small enough to pass into the duodenum, especially if any catarrh of the ducts (which might lead to partial obstruction) is overcome by combating the infection which gave rise to it.

"Thus, a diet which renders the bile capable of dissolving more cholesterol, drugs capable of overcoming the biliary infection, and measures capable of preventing biliary stasis, are likely to stop the formation of gall-stones if adequately employed at a sufficiently early stage.

1.—*Diet.*—In order that no more crystals of cholesterol should be deposited and that any already deposited in the gall-bladder may be redissolved, it is essential that the bile should not be in a saturated condition. A diet must, therefore, be chosen which contains a minimum quantity of cholesterol. With the exception of brain, the yolk of egg contains a larger percentage of cholesterol than any other food. No eggs should be allowed, and nothing made from the yolk of eggs. Butter and cream should be used sparingly; the former contains 0.4 percent of cholesterol, compared with 2 percent in egg-yolk and brain. Kidney, liver, sweetbread, and brain are not allowed. Since all animal fats increase the cholesterol percentage in the blood, quite apart from the cholesterol they contain, the fat of meat, and pork, goose and duck should also be prohibited. In Hurst's opinion, women should avoid the yolk of egg during the last four months of pregnancy and the first two months after, even if they have never had any symptoms of gall-bladder disease, for there is no doubt that the hypercholesterolemia at the time is a powerful predisposing cause of gall-stones.

2.—*Biliary Antiseptics.*—Whenever the bile, which has been removed by duodenal catheterization, is found not to be sterile, an attempt should be made to render it as strongly antiseptic as possible, in the hope that the further multiplication of bacteria in the gall-bladder may cease and even that the infection may be overcome, if conditions are favorable. Doctor Hurst thinks it worth while to give a trial to treatment by biliary antiseptics in most cases of chronic cholecystitis; similar treatment should follow in operation performed on the biliary tracts and should precede it for a few days, unless it is an emergency operation. As a matter of routine, biliary antiseptics should be given in typhoid fever and paratyphoid fevers.

Salicylates and hexamethylenamine are the only two antiseptics which are excreted in the bile. Salicylates are true cholagogs, increasing the excretion of bile salts and

cholesterol without increasing the concentration of bile. They exert a definite antiseptic action on the bile, and have the further effect of relieving general malaise and any local discomfort which may be present. From 10 to 20 grains of sodium salicylate or aspirin should be taken three times a day for at least three months and then for a week in every month.

Since it has been demonstrated that hexamethylenamine is excreted in the bile and that it acts as a biliary antiseptic, it is clearly indicated in infective gall-bladder disease. While it has been found in urinary infections that hexamethylenamine does not act unless formalin is set free in an acid medium and while therefore it is usually combined with acid sodium phosphate—it has been proved experimentally that hexamethylenamine can act as an antiseptic in the alkaline bile. This seems to depend in some way upon the presence of bile salts in the bile. In order to secure prompt and satisfactory effects, it is well to push the dose as much as possible. The maximum dose permissible depends upon the vulnerability of the bladder; frequency of mixturition with the passage of blood and bladder-cells occurs with an overdose. However, by adding sufficient potassium citrate to make the urine alkaline, Doctor Hurst has found that the amount of hexamethylenamine that the patient can take is greatly increased.

He usually gives a single dose of hexamethylenamine every night with enough potassium citrate to keep the urine alkaline. Beginning with 20 grains of hexamethylenamine and 60 grains of potassium citrate, he increases the dose of the former by 10 grains every night until the slightest sign of bladder irritability is felt, or until the urine contains the first trace of blood. [We confess that we would not dare to push the remedy to that extent in general practice, although it may be perfectly safe when the patient is under observation in the hospital.—Ed.] The dose is then reduced to what it was before the last addition was made and the patient continues to take this amount for several weeks, the urine still being examined once a week to see that no blood appears.

As a rule, the patient is able to take the same dose for an indefinite period, but it is safest to give it only 5 days in each week. While the individual toleration varies, Doctor Hurst has found it commonly possible to give as much as 60 grains of hexamethylenamine every night, even more in some cases.

In several cases of cholecystitis, this treatment brought about complete sterilization of the infected bile, pus cells which were at first present in the bile disappearing at the same time. There also followed a disappearance of tenderness, pyrexia, and other clinical signs of cholecystitis.

In this, as in so many other conditions of importance, the focal infections in teeth, tonsils, nasal sinuses, appendix, etc., can not be overestimated, and such foci must invariably be searched for and eliminated. An autogenous vaccine prepared from B. coli or other organs isolated from the bile obtained aseptically by duodenal catheterization may be tried. It may prove useful in a fair number of cases.

3.—*The Prevention of Biliary Stasis.*—Stasis of bile in the biliary tracts and especially in the gall-bladder must be prevented as far as possible. Under ordinary conditions, bile is secreted continuously, but collects in the gall-bladder until the first chyme leaves the stomach after a meal, when a copious flow of bile into the duodenum occurs.

Meltzer has shown that the introduction of a concentrated solution of magnesium sulphate into the duodenum has the same effect on the gall-bladder or Oddi's sphincter as acid chyme. Therefore, it has been recommended that this solution should be introduced directly into the duodenum through an Einhorn tube every day in cases of gall-bladder infection. However, it has been found feasible to obtain the same results more conveniently by taking the solution by mouth, about an hour before breakfast. The duodenum remains empty for half or three-quarters of an hour, after which there is a sudden rush of bile just as abundant as that obtained by the direct method. From one to four treatments of magnesium sulphate in concentrated solution should be used, the dose depending upon the condition of the patient's bowels. By this means, the complete evacuation of all the biliary passages which are not actually obstructed can be assured at least once a day.

In the presence of visceroptosis, an efficient abdominal support will help to prevent biliary stasis. A moderate amount of exercise is useful.

4.—*Olive Oil, Belladonna,* and *Hydrochloric Acid.*—There is no doubt that in certain cases a tablespoonful of olive oil taken before meals relieves gall-bladder dyspepsia. This is probably due to the fact that the oil is a powerful inhibitant of gastric secretion and gastric spasm; therefore, it probably gives relief in the presence of hyperchlorhydria in gastric hyperactivity or in spasms.

In cases of this sort, 5 or 10 minims of tincture of belladonna given before meals is also often very helpful. However, when achlorhydria exists, olive oil will aggravate the symptoms while 1 dram of diluted hydrochloric acid given in 5 ounces of sweetened orange or lemon juice with water as a beverage at meals may give relief.

5.—*Surgery.*—When the presence of gall-stones has been definitely established, an operation should be advised, in Doctor Hurst's opinion; unless definite contraindications exist. In that event, the medicinal treatment should be tried and general tonic treatment be given with a view to later operation. In other cases, when medicinal treatment fails to give relief, or if the patient lives in surroundings where prompt surgical aid is not obtainable, in case of emergency, operation should be advised.

Doctor Hurst considers cholecystectomy to be preferable to cholecystotomy.

A patient who has had gall-stones removed by operation should be careful with his diet, continue with the magnesium sulphate, and perhaps from time to time take some salicylate and hexamethylenamine, in order to prevent their reformation in the ducts, which may become greatly dilated after cholecystectomy, owing to the resistance offered by Oddi's sphincter.

DYSMENORRHEA AND THE ENDOCRINE GLANDS

G. Y. Oliver (*Prescriber*, Dec., 1923) quotes a record of careful observations in a large number of cases of dysmenorrhea by saying that:

1.—Dysmenorrhea may be divided into two classes: (1) Primary, in which pain is due to some disturbance of the menstrual process, the patient being free from pain between periods; (2) secondary, due to organic disease which is a source of pain independent of menstruation, incidentally making the menstrual process more painful.

2.—Primary dysmenorrhea is amenable to organotherapeutic treatment, being due largely to endocrine disorder.

3.—The following hypotheses are advanced to explain the disease and its suitable treatment:

(a) Deficient secretion of corpus luteum causes more than one ovum to be shed at a time; this leads to overstimulation of the ovaries, uterus, mammæ, and anterior pituitary.

(b) Excessive formation of clots is caused by calcium carbonate and phosphate, the parathyroid secretion being insufficient to form the calcium-ion protein molecule. Overactivity of the gonads predisposes to parathyroid deficiency.

(c) Underactivity of posterior pituitary leads, in case of unstable thyroid, to overactivity of thyroid at the period.

(d) Underactivity of thyroid leads to secretion of mucus from the cells lining the endometrium.

(e) The fifteen diagnostic signs, which should always be looked for, will enable the physician to refer the case to one or other of the five types, and to treat the case with corpus luteum, post-pituitary, or parathyroid. Pluriglandular treatment, such as "hormotone", is useful in border-line cases.

The author adds that it should be clearly understood that the cases described in this paper belong to the primary, or essential, type of dysmenorrhea only; also that the results of treatment on the lines indicated are not so good when the patient has previously had the uterus dilated and curetted. The author hopes to hear from any practitioner who tries the treatment outlined, especially if his results are not as good as his own.

Among the Books

PRICE: "DENTAL INFECTIONS"

Dental Infections, Oral and Systemic. Being a Contribution to the Pathology of Dental Infections, Focal Infections, and the Degenerative Diseases. By Weston A. Price, D. D. S., M. S., F. A. C. D. Volume I, Researches on Fundamentals of Oral and Systemic Expressions of Dental Infections. Volume II, Dental Infections and the Degenerative Diseases, contains Researches on Clinical Expression of Dental Infection. Cleveland: The Penton Publishing Co. 1923. Price $20.00.

This work is too large and contains too many detailed discussions than that it could be reviewed within the limits of our regular review department. We have followed our predilection for letting the author have his own say in regard to his work. An article outlining the arguments presented in the book will be found on p. 245 of this issue of CLINICAL MEDICINE. In this place, we reproduce a few of the points that are presented and which we believe will arouse in many physicians and dentists the desire to study Doctor Price's work. The author informs us that, among other things, the two volumes contain several important new contributions to corrective and preventive medicine, for instance:

1.—New data regarding the significance of the existing type of dental pathology and consequent new interpretations.

2.—Evidence of relationship between the type of systemic envolvements and the type of dental pathology.

3.—New data relating both the type of dental pathology and the type of systemic envolvement to the blood chemistry.

4.—Evidence of the role of inheritance in organ and tissue susceptibility to the streptococcal lesions.

5.—Data indicating that elective localization qualities of organisms when they occur do so largely, as the result of specific influences of the host which furnishes the environment for that dental focal infection.

6.—Data indicating that sensetization states may be produced by toxic substances elaborated in infected teeth.

7.—Data indicating that these sensitization reactions can develop, under certain particular conditions, structures which may become precancerous.

8.—Data indicating a distinct relationship between a particular type of dental pathology and susceptibility to tuberculosis.

9.—An abundance of data, indicating that very many of the degenerative diseases have as a contributing, if not a principal etiological factor, a chronic dental infection.

10.—Data strongly indicating that a vigorous reaction about a dental infection, amounting to a local quarantine, constitutes, while it lasts, a condition of relative safety for the patient, whereas the absence of local quarantine, means that the warfare must take place in other parts of that patient's body, since it is not taken care of immediately about the infected tooth. The break tends to come in the tissue which is weakened either by lack of an inherited defense or by an overload.

KOLMER: "INFECTION, IMMUNITY AND BIOLOGIC THERAPY"

A Practical Textbook of Infection, Immunity and Biologic Therapy. With Special Reference to Immunologic Technic By John A. Kolmer, M. D., Dr. P. H., D. Sc. With an Introduction by Allen J. Smith, M. D. Illustrated. Third Edition, Thoroughly Revised and Mostly Rewritten. Philadelphia: W. B. Saunders Company. 1923. Price $12.00.

The medical man, whether he be general practitioner or specialist, or research worker, will find Doctor Kolmer's textbook of great service. We have used it frequently, in fact, constantly, ever since the first edition appeared, and always with satisfaction.

Doctor Kolmer describes the processes attending infection and the organic resistance to it; then the problems of immunity and of biologic therapy in a manner that enable the student to form proper views regarding these difficult problems that yet are of great practical significance.

The present, third, edition interests us (aside from the matter contained in the earlier ones) because of the chapter on non-specific protein therapy and that on the biologic therapy of tuberculosis. The method of non-specific protein therapy has been introduced and advocated with great enthusiasm. Some very good results have been observed. However, it is to be noted, as Kolmer points out, that the procedure is still in its infancy, that it possesses marked possibilities for harm and that great caution should be exercised in its practical employment.

The chapter on the biologic treatment of tuberculosis necessarily must interest every physician, immaterial what his particular field of practice may be.

It is quite evident, from reading and studying Doctor Kolmer's book, that he is an unusually successful teacher. We have formed that opinion years ago, this present edition merely confirming it.

MEDICAL CLINICS OF NORTH AMERICA

The March issue of *The Medical Clinics of North America* is the St. Louis Number and contains, as a first contribution, a Clinic of Dr. William Engelbach, on Pituitary Tumor. Other subjects dealt with and of much interest are: Hypertension and Nephritis; Nephritis in Children; Heart Disease in a Neurologic Clinic; Hysteria; Headache; On the Use of Digitalis in the Treatment of Patients with Different Types of Heart Disease; Purpura; Focal Infection in General, with Special Reference to the Prostate, among many others.

The Medical Clinics of North America is published bi-monthly by W. B. Saunders Company, Philadelphia and London, at $12.00 for the six annual numbers. It is representative of American medicine inasmuch as it contains the teachings of our leading clinicians.

WHITMAN: "ORTHOPEDIC SURGERY"

A Treatise on Orthopædic Surgery. By Royal Whitman, M. D. Seventh Edition, Thoroughly Revised. Illustrated. Philadelphia: Lea & Febiger. 1923. Price $9.00.

In the treatment of his subject matter, the author is mindful of the fact that the majority of the deforming diseases with which orthopedic surgery is concerned are first cared for by the general practitioner. For this reason, he has been at some pains to demonstrate methods of systematic physical examination that lead to early diagnosis and so to explain the relation of causes to consequences as to indicate in natural sequence the principles of preventive treatment.

In view of the fact that the diseases coming under the care of the orthopedic surgeon do not lend themselves readily to a pathological classification, the space allotted to the various subjects has been determined by their relative importance, numerical or otherwise, in the hospital service. Accordingly, we find first the various orthopedic affections of the spinal column discussed, beginning with tuberculous disease of the spine. Then follow diseases of bones and joints and those of the joints especially from the hip joint down and up. Diseases of the nervous system also are treated, that is to say, those which cause deformities, like acute anterior poliomyelitis, cerebral paralysis of childhood, torticollis, and many others.

We are decidedly in agreement, with the author when he calls attention to the great interest that these affections possess for the general practitioner. For that reason, we recommend the study of this book urgently.

PARHON & GOLDSTEIN: "ENDOCRINOLOGY"

Traité D'Endocrinologie (Les secrétions internes au point de vue morphologique, chimique, physiologique, pathologique et thérapeutique). Par G. I. Parhon et M. Goldstein. Tome I-er. La Glande Thyroide. Jassy: Vista Romineasca. S. A. 1923.

The authors of this book, which is the first part of a handbook of the internal secretions, point to an earlier publication on the same subject, published in 1909, which was the first book in which the problems of the endocrine glands in their physiologic and pathologic viewpoint were considered in their interrelations. This first part of the work is devoted to the thyroid gland and the parathyroids. It is to be followed by other portions devoted to the other members of the endocrine system.

The senior author especially, Professor Parhon, is known for his extensive and intensive studies in endocrinology and has the faculty of relating that which he knows clearly and acceptably.

MASSEY: "ELECTROTHERAPEUTICS"

Practical Electrotherapeutics and Diathermy. By G. Betton Massey, M. D. New York: The Macmillan Company. 1924. Price $6.50.

The clinical application of electrotherapeutic measures has become so general that it has been adopted in virtually all specialties. Indeed, the author of this book believes that electrotherapeutics as a specialty by itself is ready to pass and to be adopted by the general surgeon, the industrial surgeon, the gynecologist, urologist, dermatologist, rhinologist, ophthalmologist, neurologist, etc.—in short, electrotherapeutics, ionization, electrocoagulation, diathermy, are applicable in all phases of therapy.

It goes without saying that a book of this

sort demands a great deal of special and technical study. However, this having been mastered, the clinical application of the methods learned becomes interesting and productive of good.

MCFARLAND: "FIGHTING SMALL FOES"

Fighting Foes Too Small to See. By Joseph McFarland, M. D. Illustrated. Philadelphia: F. A. Davis Company. 1924. Price $2.50.

The text of this book is based upon a series of four lectures which the author delivered at the Wagner Free Institute of Science of Philadelphia, under the fund of the Richard B. Westbrook Free Lectureship. It deals with microbiology, especially with those microorganisms which are potential and actual enemies of mankind insofar as they may produce serious disease.

The book is interestingly written—even the introduction attracts through its very first sentence. The text will be acceptable to physicians to refresh their own minds and to clarify their ideas for the instruction of their patients. Of fully as great value the book will prove when it is recommended to intelligent laymen for their study.

PRATT: "INTRANASAL SURGERY"

Intranasal Surgery. By Fred J. Pratt, M. D., and John A. Pratt, M. D. Illustrated. Philadelphia: F. A. Davis Company, 1924. Price $5.00.

This book, which is beautifully illustrated, very naturally appeals to the rhinologic surgeon far more than to the general practitioner who does not do enough intranasal surgery to acquire the necessary dexterity. Those for whom it is intended will find it reliable.

PORTER AND CARTER: "THE SICK INFANT"

Management of the Sick Infant. By Langley Porter, M. D. and William E. Carter, M. D. Second Revised Edition. Illustrated. St. Louis: C. V. Mosby Company. 1924. $8.50.

The fact that this second edition was called for only two years after the appearance of the first bears witness to the appreciation that was accorded to the work. It is not a textbook of pediatrics in the commonly accepted term, inasmuch as its considerations are limited to the problems of the sick infant. We are learning that children are not merely miniature men and women; it is even more true that infants—children in the first two years of life, present problems entirely their own which should be investigated and handled strictly on their own merits. These desiderata are beautifully met by the authors of the book before us which is full of practical and usable advice.

DUTTON: "INTRAVENOUS THERAPY"

Intravenous Therapy. Its Application in the Modern Practice of Medicine. By Walton Forest Dutton, M. D. Illustrated. Philadelphia: F. A. Davis Company. 1924. Price $5.50.

In view of the decided and constantly increasing favor with which intravenous therapy has been considered for a number of years, it is strange that, so far, no textbook devoted to this method of treatment has been available. A few small books on hypodermic medication have been published, but this is the first treatise devoted to the intravenous introduction of remedial agents. The discussions include all therapeutic efforts brought to bear directly upon the blood stream and properly embrace venesection, transfusion of whole or modified blood, and the introduction of saline or other tonic solutions into the circulation, as well as medication by the intravenous route.

The text is divided into two parts, the first of which deals with the general technic of intravenous therapy, while the second deals with the clinical application of the method in a great many diseases. An appendix gives rules for comparing thermometric scales, tables of approximate measure, tables for making solutions, etc. A carefully prepared index adds to the usefulness of the book.

We hold this treatise to be very timely and useful.

LYON: "DRAINAGE OF THE GALL TRACT"

Non-Surgical Drainage of the Gall Tract. A Treatise Concerned With the Diagnosis and Treatment of Certain Diseases of the Biliary and Allied Systems, in their Relation to Gastro-Enterology and General Clinical Medicine. By B. B. Vincent Lyon, A. B., M. D. Illustrated. Philadelphia: Lea & Febiger. 1923. Price $10.00.

A treatise dealing with the non-surgical drainage of the gall tract is of use not only to the gastro-enterologists but no less to the surgeon and fully as much to the general practitioner. Meltzer's brilliant method which

was introduced but a few years ago, after several years of careful investigation, has established itself so thoroughly on its own merit that it must be accepted as permanent and not as a transitory fad. Doctor Lyon's treatise, containing over 600 pages of text, bears witness to the large amount of diligent work that has been done on the subject.

CABOT: "PHYSICAL DIAGNOSIS"

Physical Diagnosis. By Richard C. Cabot, M. D. Eighth Edition. Revised and Enlarged, with Six Plates and 279 Figures in the Text. New York: William Wood and Company. 1923. Price $5.00.

We have several times already had the pleasure of announcing editions of this very excellent book which, in some ways, differs from ordinary textbooks. A textbook is, all too often, a sort of grab-bag, a collection of statements and teachings that are found here and there in literature and that are collated—not always very critically. It is by no means an invariable custom of textbook writers to investigate and test the teachings, ideas and opinions that they incoroporate in their books, and for that reason textbooks often are unsatisfactory.

Doctor Cabot has made no attempt to describe technical processes with which he has no personal familiarity and he gives no space to the description of tests which he believes to be useless. He says:

"A book constructed on this basis should make obvious what its writer considers important and what unimportant, and reveal therein not only his opinions but his personal limitations."

Very true. While this might be a risky thing to do in some cases, it can not but be immensely valuable if followed by a successful teacher like Richard Cabot. It is needless to say that Cabot's "Physical Diagnosis" is too well known to require more than an announcement.

CLASEN: "VARICOSE LEG ULCERS"

Varicen—Ulcus cruris und ihre Behandlung als Sonderfach für den praktischen Arzt. von San.—Rat Dr. E. Clasen. Zweite, vermehrte Auflage. Berlin und Wien: Urban & Schwarzenberg. 1924. Price 2.60 Fr. Schw.

The author of this little booklet deplores that varicose veins and leg ulcers are so sadly neglected by general practitioners and insists that, with suitable care, treatment of these lesions can be made very successful. He himself has built up such a successful special practice in this field that he has been able to indulge the requirements of advancing age for a less strenuous mode of life and to retire from his general practice. He suggests that general practitioners devote greater attention to the treatment of these two annoying and very important lesions so that, in course of time, they may do likewise and build up a comfortable and well-paying specialistic practice.

The methods that Doctor Clasen employs must be read in the original. His little book is read very easily, even by those who do not have a full command of the German language.

SOME POPULAR HEALTH BOOKS

Healthy Mothers. A Volume devoted to the Health of the Expectant Mother and the care and welfare of the Child. By S. Josephine Baker, M. D., D. P. H. Boston: Little, Brown and Co., 1923. Price $1.25.

Healthy Babies. A Volume Devoted to the Health of the Expectant Mother and the care and welfare of the Child. By S. Josephine Baker, M. D., D. P. H. Boston: Little, Brown and Co., 1923. Price $1.25.

Healthy Children. A Volume Devoted to the Health of the Growing Child. By S. Josephine Baker, M. D., D. P. H. Boston: Little, Brown and Co., 1923. Price $1.25.

Books on health matters, like these before us, should be purchased by our clients at our direction, or we should provide them. It is best not to let the parents or young married people select health books indiscriminately and whenever the physician's advice is sought, it should be given to the best advantage.

Doctor Baker, the author of the three volumes announced, is well qualified for the task that the publishers have imposed upon her. Her teachings are sane and good. In matters which require the doctor's advice, she always insists that it be sought. However, there are many things in which lay people can help themselves with the aid of their own common sense and a little wholesome advice. Doctor Baker's books tend to foster the common sense and they supply the wholesome advice.

SAUER: "NURSERY GUIDE"

Nursery Guide for Mothers and Nurses. By Louis W. Sauer, M. A., M. D. Illustrated. St. Louis: C. V. Mosby Company. 1923. Price $1.75.

A useful little book by a physician whose success in practicing among babies and children has proved his competence as a teacher.